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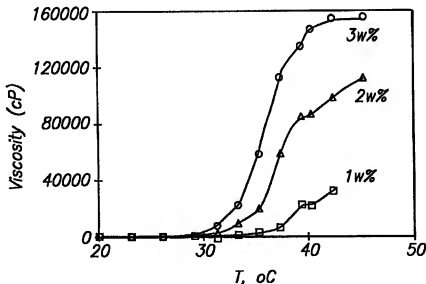
(51) International Patent Classification ⁶ : A61K 7/00, 7/021, 7/025, 7/06, 7/09, 7/16, 7/32, 7/42, 31/74		A1	(11) International Publication Number: WO 98/50005
(21) International Application Number: PCT/US98/09211		(43) International Publication Date: 12 November 1998 (12.11.98)	
(22) International Filing Date: 8 May 1998 (08.05.98)			
(30) Priority Data: 08/853,728	9 May 1997 (09.05.97)	US	
(71) Applicant: MEDLOGIC GLOBAL CORPORATION [US/US]; 4815 List Drive, Colorado Springs, CO 80919 (US).			
(72) Inventors: RON, Eyal, S.; 7 Coach Road, Lexington, MA 02173 (US). HAND, Barry, J.; 145 Butternut Hollow, Acton, MA 01718 (US). BROMBERG, Lev, S.; 15 Sherwood Road, Swampscott, MA 01907 (US). KEARNEY, Marie; 324 Faneuil Street #1, Brighton, MA 02135 (US). SCHILLER, Matthew, E.; Apartment 9, 1595 Beacon Street, Boston, MA 02146 (US). AHEARN, Peter, M.; 63 Webster Street, Whitman, MA 02382 (US). LUCZAK, Scott; 3 Remsen Avenue, Medfield, MA 02052 (US). MENDUM, Thomas, H., E.; 45 Columbus Avenue #1, Somerville, MA 02143 (US).			
(74) Agents: KREBS, Robert, E. et al; Burns, Doane, Swecker & Mathis, LLP, P.O. Box 1404, Alexandria, VA 22313-1404 (US).			
(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).			

Published

With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: COMPOSITIONS FOR COSMETIC APPLICATIONS



(57) Abstract

A cosmetic composition is described having a cosmetically acceptable carrier, comprising a reverse thermal viscosifying polymer network comprising at least one poloxamer component capable of aggregation in response to a change in temperature randomly bonded to at least one poly(acrylic acid) component; and a cosmetically active agent which imparts a preselected cosmetic effect, said carrier and said agent disposed within an aqueous-based medium.

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COMPOSITIONS FOR COSMETIC APPLICATIONS

- This application is a continuation-in-part application of copending application U.S.S.N. 60/034,805 filed January 2, 1997, and entitled "Responsive Polymer Networks and Methods of Their Use", which is a continuation-in-part application of copending application PCT/US96/10376 filed June 14, 1996, designating the United States, and entitled "Responsive Polymer Networks and Methods of Their Use", which is a continuation-in-part application of copending application U.S.S.N. 08/580, 986 filed January 3, 1996, and entitled "Responsive Polymer Networks and Methods of Their Use", each of which is incorporated entirely by reference.

Field of the Invention

- The present invention relates to a cosmetic composition useful in a variety of topical and personal care products, including treatments of disorders and imperfections of the skin or other areas of the body. More particularly, the present invention is directed to a cosmetic composition comprising a poloxamer:poly(acrylic acid) polymer network that can be designed to reversibly gel over a wide range of conditions to provide a composition having a controllable range of viscosities, making it useful in a variety of cosmetic and personal care applications.

Background of the Invention

- Many examples are known of cosmetic compositions intended for treatment of the skin or elsewhere on the body, where it is desired to have certain properties of viscosity. Hydrogels, such as cellulose, have been included as thickeners in cosmetic compositions. A hydrogel is a polymer network which absorbs a large quantity of water without the polymer dissolving in water. The hydrophilic areas of the polymer chain absorb water and form a gel region. The extent of gelation depends upon the volume of the solution which the gel region occupies.

- Reversibly gelling solutions are known in which the solution viscosity increases and decreases with an increase and decrease in temperature, respectively. Such

reversibly gelling systems are useful wherever it is desirable to handle a material in a fluid state, but performance is preferably in a gelled or more viscous state.

A known material with these properties is a thermal setting gel using block copolymer polyols, available commercially as Pluronic® polyols (BASF, Ludwigshafen, Germany), which is described in U.S. Patent No. 4, 188, 373. Adjusting the concentration of the polymer gives the desired liquid-gel transition. However, concentrations of the polyol polymer of at least 18-20% by weight are needed to produce a composition which exhibits such a transition at commercially or physiologically useful temperatures. Also, solutions containing 18-20% by weight of responsive polymer are typically very viscous even in the "liquid" phase, so that these solutions can not function under conditions where low viscosity, free-flowing is required prior to transition. In addition, these polymer concentrations are so high that the material itself may cause unfavorable interactions during use.

Another known system which is liquid at room temperature, but forms a semi-solid when warmed to about body temperature is formed from tetrafunctional block polymers of polyoxyethylene and polyoxypropylene condensed with ethylenediamine, commercially available at Tetronic® polyols. These compositions are formed from approximately 10% to 5% by weight of the polyol in an aqueous medium. See, U.S. Patent No. 5,252,318.

Joshi, et al. in U.S. Patent No. 5,252,318 reports reversible gelling compositions which are made up of a physical blend of a pH-sensitive gelling polymer (such as a cross-linked poly(acrylic acid) and a temperature-sensitive gelling polymer (such as methyl cellulose or block copolymers of poly(ethyleneoxide) and poly(propyleneoxide)). In compositions including methylcellulose, 5- to 8-fold increases in viscosity are observed upon a simultaneous change in temperature and pH for very low methylcellulose levels (1-4% by weight). See, Figs. 1 and 2 of Joshi, et al. In compositions including Pluronic® and Tetronic® polyols, commercially available forms of poly(ethyleneoxide)/poly(propyleneoxide) block copolymers, significant increases in viscosity (5- to 8-fold) upon a simultaneous change in temperature and pH are observed only at much higher polymer levels. See, Figs. 3-6 of Joshi, et al.

Hoffman, et al. in WO95/24430 disclose block and graft copolymers comprising a pH-sensitive polymer component and a temperature-sensitive polymer component. The block and graft copolymers are well-ordered and contain regularly repeating units of the pH-sensitive and temperature-sensitive polymer components. The copolymers are described as having a lower critical solution temperature (LCST), at which both solution-to-gel transition and precipitation phase transition occur. Thus, the transition to a gel is accompanied by the clouding and opacification of the solution. Light transmission is reduced, which may be undesirable in many applications, where the aesthetic characteristics of the composition are of some concern.

Thus, the known systems which exhibit reversible gelation are limited in that they require large solids content and/or in that the increase in viscosity is less than 10-fold. In addition, some known systems exhibit an increase in viscosity which is accompanied with the undesirable opacification of the composite.

Summary of the Invention

It is an object of the present invention to provide a cosmetic composition which includes a component capable of reversible gelation or viscosification.

It is a further object of the invention to provide a cosmetic composition which includes an ingredient capable of gelation or viscosification at very low solids content.

It is another object of the present invention to provide a cosmetic composition which possesses improved flow and gelation characteristics as compared to properties possessed by conventional reversible gelation compositions.

It is a further object of the invention to provide a polymer network composition for use in cosmetic compositions useful as a surfactant or emulsifier in the solubilization of additives and, in particular, hydrophobic additives.

It is a further object of the invention to provide a cosmetic composition which possesses the appropriate thickness, emolliency and cosmetic effect with a minimum of solids content.

It is a further object of the invention to provide a polymer network for use in cosmetic compositions useful as a suspending agent for otherwise insoluble additives.

It is yet a further object of the present invention to provide a composition capable of solubilizing emulsions at elevated temperatures.

It is yet a further object of the invention to provide new and useful cosmetic compositions incorporating the reversibly gelling polymer network composition of the present invention, which take advantage of its unique advantageous properties.

It is yet another object of the present invention to provide reversibly gelling polymer network compositions which are composed of biocompatible polymers.

These and other objects of the invention are achieved with a cosmetic compositions which incorporates a poloxamer:poly(acrylic acid) polymer network as a cosmetically acceptable carrier. The polymer network comprises a poloxamer component randomly bonded to a poly(acrylic acid), or PAA, component in and aqueous-based medium, the polymer network being capable of aggregating in response to an increase in temperature. The reverse thermal viscifying poloxamer:poly(acrylic acid) polymer network includes random covalent bonding between the poly(acrylic acid) component and the poloxamer component of the network. The polymer network may also include some unbound or "free" poloxamer or other additives which contribute to or modify the characteristic properties of the polymer composition.

In addition, the cosmetic composition includes a cosmetic agent selected to provide a preselected cosmetic effect. By "cosmetic agent", as that term is used herein, it is meant that the additive imparts a cosmetic effect. A cosmetic effect is distinguishable from a pharmaceutical effect in that a cosmetic effect relates to the promoting bodily attractiveness or masking the physical manifestation of a disorder or disease. In contrast, a pharmaceutical seeks to treat the source or symptom of a disease or physical disorder. It is noted however, that the same additives may have either a cosmetic or pharmaceutical effect, depending upon the amounts used and the manner of administration.

By "cosmetic", as that term is used herein, it is meant the cosmetic and personal-care applications intended to promote bodily attractiveness or to cover or mask the physical manifestations of a disorder or disease. Cosmetics include those products subject to regulation under the FDA cosmetic guidelines, as well as sunscreen products,

acne products, skin protectant products, anti-dandruff products, and deodorant and antiperspirant products.

By "gelation" or viscosification, as that term is used herein, it is meant a drastic increase in the viscosity of the polymer network solution. Gelation is dependent on the initial viscosity of the solution, but typically a viscosity increase in the range of 2- to 100-fold, and preferably 5- to 50-fold, and more preferably 10- to 20-fold is observed in the polymer network which is used in the preparation of the cosmetic compositions of the invention. Such effects are observed in a simple polymer network solution and the effect may be modified by the presence of other components in the cosmetic composition.

By "reversibly gelling" as that term is used herein, it is meant that the process of gelation takes place upon an *increase* in temperature rather than a decrease in temperature. This is counter-intuitive, since it is generally known that solution viscosity *decreases* with an increase in temperature.

As used herein, "poloxamer" is a triblock copolymer derived from poly(ethyleneoxide)-poly(propyleneoxide)-poly(ethyleneoxide) blocks. The poloxamer is capable of responding to a change in temperature by altering its degree of association and/or agglomeration. The aggregation may be in the form of micelle formation, precipitation, labile cross-linking or other factors. The poloxamer has the general formula of a triad ABA block copolymer, $(P_1)_a(P_2)_b(P_1)_a$, where P_1 = poly(ethyleneoxide) and P_2 = poly(propyleneoxide) blocks, where a is in the range of 10-50 and where b is in the range of 50-70.

The poly(acrylic acid) component includes poly(acrylic acid) and its salts. The poly(acrylic acid) supports and interacts with the poloxamer component so that a multi-material, responsive polymer network is formed. The interaction of the poloxamer and poly(acrylic acid) exhibits a synergistic effect, which magnifies the effect of the poloxamer component in viscosifying and/or gelling the solution.

The novel interaction between the constituent polymers components of the polymer network permits formation of gels at very low solids content. Gelation and/or viscosification is observed in aqueous solutions having about 0.01 to 20 wt % of the

poloxamer component and about 0.01 to 20 wt% of the poly(acrylic acid) component. A typical reversibly gelling polymer network may be comprised of less than about 4 wt% of total polymer solids (e.g., poloxamer and poly(acrylic acid)) and even less than 1 wt% total polymer solids while still exhibiting reverse thermal viscosification. Of course, the total solids content including additives of a reversibly gelling polymer network composition may be much higher. The viscosity of the gel increases at least ten-fold with an increase in temperature of about 5°C at pH 7 and 1 wt% polymer. Viscosity increases may be even greater over a larger temperature range at pH 7 and 1% polymer network content.

10 The relative proportion of poloxamer and poly(acrylic acid) may vary dependent upon the desired properties of the polymer composition. In one embodiment, the poloxamer is present in a range of about 1 to 20 wt% and the poly(acrylic acid) is present in a range of about 99 to 80 wt%. In another embodiment, the poloxamer component is present in a range of about 79 to 60 wt%. In another embodiment, the
15 poloxamer component is present in a range of about 41 to 50 wt%. In another embodiment, the poloxamer component is present in a range of about 51 to 60 wt% and the poly(acrylic acid) component is present in a range of about 49 to 40 wt%. In yet another embodiment, the poloxamer component is present in a range of about 61 to 90 wt% and the poly(acrylic acid) component is present in a range of about 39 to 20 wt%.
20 In another embodiment, the poloxamer component is present in a range of about 81 to 99 wt% and the poly(acrylic acid) component is present in a range of about 10 to 1 wt%.

25 The poloxamer:poly(acrylic acid) polymer network described above is included in a cosmetic composition to improve the flow characteristics, thickness and other properties of the composition. The composition includes additional cosmetic agents, such as are needed for the cosmetic purpose of the composition. Additives also may be included to modify the polymer network performance, such as to increase or decrease the temperature of the liquid-to-gel transition and/or to increase or decrease the viscosity of the responsive polymer composition.

In one aspect of the invention, the poloxamer:poly(acrylic acid) polymer network is incorporated into a cosmetic composition to impart thickening properties to the cosmetic composition at the use and/or application temperature. Such thickening properties include enhanced overall viscosity, as well as a desirable viscosity response with temperature. The polymer network may be useful as a thickener in pH ranges where other thickeners are not effective.

In another aspect of the invention, the poloxamer:poly(acrylic acid) polymer network is incorporated into a cosmetic composition to stabilize and solubilize hydrophobic agents in the cosmetic composition. The polymer network may be included to increase emulsion stability. Many emulsions, i.e., suspension of small droplets or particles of a first material in a second material, lose viscosity upon heating. As will be demonstrated herein, the poloxamer:poly(acrylic acid) polymer network retains its emulsifying properties even with temperature increase.

In addition, it may be included in the composition to impart emolliency to the composition. The composition may also act as a film-forming agent after it has been applied to the skin. This film-forming agent may be used as a barrier to prevent water loss from the skin which contributes to the moisturization of the skin.

In another aspect of the invention, the poloxamer:poly(acrylic acid) polymer network may be included as an additive in cosmetic applications to prevent viscosity loss at elevated temperatures.

Brief Description of the Drawing

The invention is described with reference to the Drawing, which is presented for the purpose of illustration and is in no way intended to be limiting, and in which:

FIG. 1 is a graph of viscosity vs. temperature for a 1 wt%, 2 wt%, and 3 wt% responsive polymer network aqueous composition of a poloxamer:poly(acrylic acid) (1:1) at pH 7.0 measured at a shear rate of 0.44 sec^{-1} ;

FIG. 2 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition demonstrating reversibility of the viscosity response;

FIG. 3 shows the viscosity response of a 2 wt% poloxamer:poly(acrylic acid) polymer composition at various shear rates;

FIG. 4 shows a viscosity response curve for a 2 wt% poloxamer:poly(acrylic acid) polymer network composition prepared with nominal mixing and stirring and prepared using high shear homogenization (8000 rpm, 30 min);

FIG. 5 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition at various pHs;

FIG. 6 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition with and without addition of 0.25 wt% KCl;

FIG. 7 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition with and without addition of 0.5 wt% acetamide MEA;

FIG. 8 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition without and with 5 wt%, 10 wt% and 20 wt% added ethanol, respectively;

FIG. 9 is an illustration of a reversibly gelling polymer network used as an emulsifier and stabilizer for a hydrophobic agent;

FIG. 10 is a schematic illustration of the poloxamer:poly(acrylic acid) polymer network below and above the transition temperature illustrating the aggregation of the hydrophobic poloxamer regions;

FIG. 11 is a graph of viscosity vs. pH for a 1 wt% responsive polymer network aqueous composition of a poloxamer/poly(acrylic acid) (1:1) measured at a shear rate of 0.44 sec^{-1} ;

FIG. 12 is a plot of viscosity vs. temperature for (a) a 1 wt% responsive polymer network aqueous composition of Pluronic® F127 poloxamer:poly(acrylic acid) (1:1) and (b) a 1 wt% physical blend of Pluronic® F127 poloxamer:poly(acrylic acid) (1:1) at pH 7.0 measured at a shear rate 0.22 sec^{-1} ;

FIG. 13 is a plot of viscosity vs. temperature for a 1 wt% responsive polymer network aqueous composition of Pluronic® F88 poloxamer:poly(acrylic acid) (1:1) in deionized water at pH 7.0 measured at shear rate of 22 sec⁻¹;

FIG. 15 is a plot of viscosity vs. temperature for a responsive polymer network composition of 2 wt% Pluronic® F123 poloxamer:poly(acrylic acid) (1:1) at pH 7.0 measured at a shear rate of 22 sec⁻¹;

FIG. 16 is a plot of viscosity vs. temperature for 1 wt% made of series of poloxamers and poly(acrylic acid) (1:1) in deionized water at a shear rate of 132 sec⁻¹;

FIG. 17 is a plot showing release of hemoglobin from a poloxamer:poly(acrylic acid) polymer network of the invention;

FIG. 18 is a plot showing the release of lysozyme from the poloxamer:poly(acrylic acid) polymer complex of the invention;

FIG. 19 is a plot showing release of insulin from a poloxamer:poly(acrylic acid) polymer network composition of the invention;

FIG. 20 is a plot of viscosity vs. temperature for a poloxamer:poly(acrylic acid) polymer network composition (a) before and (b) after sterilization by autoclave;

FIG. 21 is a plot of viscosity vs. temperature for an oil-free moisturizing formulation prepared from (a) a responsive polymer network composition of the invention and (b) a convention oil-in-water formulation;

FIG. 22 is a plot of equilibrium solubility of estradiol (A, B) and progesterone (C, D) in aqueous solutions (pH 7) of Pluronic® F127 (A, C) and responsive polymer network (B, D) vs. temperature;

FIG. 23 is a plot of the ratio of equilibrium solubilities of estradiol in responsive polymer network and water vs. polymer concentration in the responsive polymer network solutions;

FIG. 24 is a plot of the effect of loading fluorescein on the onset of gelation of responsive polymer network vs. total polymer concentration in responsive polymer network solution (pH 7.0);

FIG. 25 is a plot of the percentage of (a) estradiol and (b) progesterone release from responsive polymer network vs. time;

FIG. 26 is a plot of the rate of progesterone release and macroscopic viscosity vs. polymer concentration;

FIG. 27 is a plot of the percentage of progesterone release vs. polymer concentration in responsive polymer network; and

5 FIG. 28 is a plot of the relative diffusivity of poly(styrene) latex particles in water and responsive polymer network.

Detailed Description of the Invention

The present invention is directed to a cosmetic composition comprising a
10 cosmetically acceptable carrier comprising a novel poloxamer:poly(acrylic acid) polymer network. The polymer network functions as a temperature sensitive thickening agent, and in addition possesses surfactant and emulsifying capabilities which may be beneficial to the cosmetic composition. The polymer network composition according to the invention includes a poloxamer component randomly bonded to a poly(acrylic acid)
15 component. The two polymer component may interact with one another on a molecular level. The polymer network contains about 0.01 - 20 wt% each of poloxamer and poly(acrylic acid). Exemplary polymer network compositions range from about 1:10 to about 10:1 poloxamer:poly(acrylic acid). Polymer network gel compositions which exhibit a reversible gelation at body temperature (25-40°C) and/or at physiological pH
20 (ca. pH 3.0-9.0) and even in basic environment up to pH 13 (hair care) are particularly preferred for cosmetic applications.

In one embodiment of the invention, a 1:1 poloxamer:poly(acrylic acid) polymer network at appropriate pH exhibits flow properties of a liquid at about room temperature, yet rapidly thickens into a gel consistency of at least about five times
25 greater, preferably at least about 10 times greater, and even more preferably at least about 30 times and up to 100 times greater, viscosity upon increase in temperature of about 10°C and preferably about 5°C. The reversibly gelling polymer network of the present invention exhibit gelation even at very low polymer concentrations. For example, polymer network compositions at pH 7 comprising about 0.5 wt% poloxamer
30 component and about 0.5 wt% PAA exhibits a significant increase in viscosity from a

free-flowing liquid (50 cps) to a gel (6000 cps). The observed gelation takes place at low solids contents, such as less than 20 wt% or preferably less than about 10 wt%, or more preferably less than about 2.5 wt% or most preferably less than about 0.1 wt%. Thus, only a small amount by weight of the polymer network need be incorporated into
5 a cosmetic composition in order to provide the desired thickening or viscosifying effect.

The reverse viscosification effect at low polymer concentrations provides clear, colorless gels which are particularly well-suited to cosmetic applications. For example, very little residue is formed upon dehydration which may be important in some applications, such as in topically applied cosmetics. An additional advantage of the
10 polymer network of the invention is that it remains clear and translucent above and below the critical temperature or pH. These characteristics of the reversibly gelling polymer network make it well suited for use in cosmetic compositions.

The polymer network of the present invention technology may be added to cosmetic formulations to increase the thickness and viscosity of the composition. The
15 poloxamer:poly(acrylic acid) polymer network possesses hydrophobic regions capable of aggregation. Unlike conventional thickeners, the aggregation of the polymer network of the present invention is temperature sensitive. Thus the inventive polymer network of the present invention may have a transition temperature (i.e., temperature of aggregation) above room temperature so that the cosmetic composition is of low
20 viscosity at or below room temperature and is of high viscosity at or around body temperature (body temperature includes both surface and internal body temperature). Thus, a composition may be prepared at low temperatures while the polymer network is in a low viscosity state. Mixing of ingredients under low viscosity is expected to be easier, thus simplifying the manufacturing process. Yet, the resultant mixture would be
25 of increased viscosity at use temperatures. As a further advantage, a cosmetic composition comprising poloxamer:poly(acrylic acid) polymer network may be spread thinly to allow for even application, due to its low viscosity at room temperature, but will thicken and "fill" the skin contours upon warming up to body surface temperature.

In another aspect of the invention, the composition may be applied through a
30 nozzle that provides high shear to reduce viscosity, yet the composition regains its

viscosity after application to the skin. This contrasts with conventional formulations which permanently lose viscosity after being subjected to high shear.

In another aspect of the invention, the composition may be formulated and applied as a liquid, spray, semi-solid gel, cream, ointment, lotion, stick, roll-on
5 formulation, mousse, pad-applied formulation, and film-forming formulation.

The poloxamer:poly(acrylic acid) polymer network may also be included in a cosmetic composition for use as a stabilizing, solubilizing or emulsifying agent for a hydrophobic component of the cosmetic formulation. The strong hydrophilic regions of the poloxamer resulting from aggregation and micelle formation create hydrophobic
10 domains which may be used to solubilize and control release of hydrophobic agents. Similar micelle-based systems have been shown to protect trapped peptides against enzymatic degradation from surface enzymes.

The reversibly gelling polymer network of the present invention is a unique polymer composition designed to abruptly change its physical characteristics or the
15 characteristics and properties of materials mixed therewith with a change in temperature. Without intending to be bound by any particular mechanism or chemical structure, it is believed that the structure of the polymer network involves a random bonding of the poloxamer onto the backbone of the poly(acrylic acid). A portion of the poloxamer which is present during the polymerization reaction which forms the
20 poly(acrylic acid) is bonded to the backbone of the forming poly(acrylic acid) through hydrogen abstraction and subsequent reaction. See detailed discussion of the mechanism, below. The combination of the poly(acrylic acid) and randomly bonded poloxamer gives the composition its unique properties. Any free poloxamer remaining after polymerization of PAA remains associated with the random co-polymer, resulting
25 in a miscible composition. Free poloxamer may also be present in the polymer network composition; however, its presence is not required in order to observe reverse thermal viscosification.

The poly(acrylic acid) may be linear, branched and/or cross-linked. Poly(acrylic acid) is capable of ionization with a change in pH of the solution. By
30 ionization, as that term is used with respect to poly(acrylic acid), it is meant the

formation of the conjugate base of the acrylic acid, namely acrylate. As used herein, poly(acrylic acid) includes both ionized and non-ionized versions of the polymer. Changes in ionic strength may be accomplished by a change in pH or by a change in salt concentration. The viscosifying effect of the polymer network is partly a function of the ionization of the poly(acrylic acid); however, reverse thermal gelling may occur without ionization. Changes to the ionic state of the polymer causes the polymer to experience attractive (collapsing) or repulsive (expanding) forces. Where there is no need or desire for the composition to be applied in a high viscosity state, it may be possible to prepare the composition as non-ionized poly(acrylic acid). The body's natural buffering ability will adjust the pH of the applied composition to ionize the poly(acrylic acid) and thereby develop its characteristic viscosity.

The poloxamer possesses regions of hydrophobic character, e.g., poly(propyleneoxide) blocks, and hydrophilic character, e.g., poly(ethyleneoxide) blocks. The poloxamer may be linear or branched. Suitable poloxamers include triad block copolymers of poly(ethyleneoxide) and poly(propyleneoxide) having the general formula $(P_1)_a(P_2)_b(P_1)_a$, where P_1 = poly(ethyleneoxide), and P_2 = poly(propyleneoxide) blocks, where a is in the range of 10-50 and where b is in the range of 50-70, where poly(propyleneoxide) represents the hydrophobic portion of the polymer and poly(ethyleneoxide) represents the hydrophilic portion of the polymer. Pluronic® polymers (BASF) are commercially available for (a) in the range of 16 to 48 and (b) ranging from 54-62. One or more poloxamers may be used in the reversibly gelling polymer network composition of the present invention.

The reversibly gelling responsive polymer networks compositions of the present invention are highly stable and do not exhibit any phase separation upon standing or upon repeated cycling between a liquid and a gel state. Samples have stood at room temperature for more than three months without any noticeable decomposition, clouding, phase separation or degradation of gelation properties. This is in direct contrast to polymer blends and aqueous mixed polymer solutions, where phase stability and phase separation is a problem, particularly where the constituent polymers are immiscible in one another.

And example of the dramatic increase in viscosity and of the gelation of the reversibly gelling polymer network compositions of the invention is shown in Figure 1. Figure 1 is a graph of viscosity vs. temperatures for 1 wt%, 2 wt%, and 3 wt% polymer network compositions comprising 1:1 poloxamer:poly(acrylic acid) hydrated and neutralized. The viscosity measurements were taken on a Brookfield viscometer at a shear rate of 0.44 sec^{-1} at pH 7.0. All solutions had an initial viscosity of about 1080 cP and exhibited a dramatic increase in viscosity to gel point at about 35°C . This is not typical of all polymer network compositions since polymerization condition will affect initial viscosity. Final viscosities were approximately 33,000 cP, 100,000 cP and 155,000 cP for the 1 wt%, 2 wt% and 3 wt% compositions, respectively. This represents viscosity increases of about 30-, 90- and 140-fold, respectively. This effect is entirely reversible. Upon cooling, the composition regains its initial viscosity. This is demonstrated in Figure 2, where a 1 wt% poloxamer:poly(acrylic acid) composition is warmed through the transition temperature up to 35°C (simple curve), cooled to room temperature (24°C , ticked curve) and then warmed again up to above the transition temperature (open box curve). The viscosity response was virtually identical in all three instances.

As would be expected with a non-Newtonian system, the solution viscosity differs with different shear rates. Figure 3 shows the viscosity response of a 2 wt% poloxamer:poly(acrylic acid) polymer composition at various shear rates. The viscosity response is consistent between 24°C and 34°C ; however, the final viscosity is reduced with increasing shear rate.

However, unlike many prior art hydrogels, e.g., carbomers, the poloxamer:poly(acrylic acid) polymer network composition does not permanently lose viscosity after being subjected to high shear conditions. The poloxamer:poly(acrylic acid) polymer network composition remains unaffected by such shear conditions as homogenization. Figure 4 compares the viscosity response curve of a 2 wt% poloxamer:poly(acrylic acid) polymer composition prepared with nominal mixing (simple line) and stirring with that of a polymer composition of similar composition.

prepared using high shear homogenization designated by a ticked line (8000 rpm, 30 min): No significant decrease in viscosity is observed.

A number of factors influence the viscosity and transition temperature of the composition. The more important factors include polymer concentration, pH, and presence and nature of additives.

The effect of pH on the viscosity of reversibly gelling polymer networks is shown in Figure 5. Increasing pH from the starting pH has a lesser effect on the viscosity than decreasing the pH. This may relate to the extent of ionization of the poly(acrylic acid) component of the polymer network as discussed above. This may be clearly seen in Figure 5 when comparing the viscosity response of a 1 wt% poloxamer:poly(acrylic acid) polymer composition at pH 5 and pH 11. Satisfactory viscosities can be obtained at high pHs indicating the potential value of the reversibly gelling polymer network in products such as depilatories, hair straighteners and hair relaxers.

The responsive polymer network may also include additives for influencing the performance of the polymer composition, such as the transition temperature and the viscosity of the polymer composition above the transition temperature. The following list is not intended to be exhaustive but rather illustrative of the broad variety of additives which can be used.

These materials include solvents (e.g., 2-propanol, ethanol, acetone, 1,2-pyrrolidinone, N-methylpyrrolidinone), salts (e.g., calcium chloride, sodium chloride, potassium chloride, sodium or potassium phosphates, borate buffers, sodium citrate), preservatives (benzalkonium chloride, phenoxyethanol, sodium hydroxymethylglycinate, ethylparaben, benzoyl alcohol, methylparaben, propylparaben, butylparaben, Germaben II), humectant/moisturizers (acetamide MEA, lactamide MEA, hydrolyzed collagen, mannitol, panthenol, glycerin), lubricants (hyaluronic acid, mineral oil, PEG-60-lanolin, PPG-12-PEG-50-lanolin, PPG-2 myristyl ether propionate) and surfactants.

Surfactants may be divided into three classes: cationic, anionic, and non-ionics.

An example of a cationic surfactant used is ricinoleamidopropyl ethyldimonium

- ethosulfate (Lipoquat R). Anionic surfactants include sodium dodecyl sulfate and ether sulfates such as Rhodapex CO-436. Nonionic surfactants include Surfynol CT-111, TG, polyoxyethylene sorbitan fatty acid esters such as Tween 65 and 80, sorbitan fatty acid esters such as Span 65, alkylphenol ethoxylates such as Igepal CO-210 and 430, dimethicone copolyols such as Dow Corning 190, 193, and Silwet L7001.

- The addition of polymers has been studied including xanthan gum, cellulose such as hydroxyethylcellulose (HEC), carbomethoxycellulose (CMC), lauryldimonium hydroxypropyl oxyethyl cellulose (Crodacel QL), hydroxypropylcellulose (HPC), and hydroxypropylmethylcellulose (HPMC), poly(acrylic acid), cyclodextrins, methyl acrylamido propyl triammonium chloride (MAPTAC), polyethylene oxide, polyvinylpyrrolidone, polyvinyl alcohol, and propylene oxide/ethylene oxide random copolymers. Poloxamers may also be used as additives. Examples include both the Pluronic® polyols having an $(P_1)_x(P_2)_y(P_1)_x$ structure such as Pluronic® F38, L44, P65, F68, F88, L92, P103, P104, P105, F108, L122, and F127, as well as the reverse Pluronic® R series $(P_2)_x(P_1)_y(P_2)_x$ structure such as Pluronic® 17R2 and 25R8. Other miscellaneous materials include propyleneoxide, urea, triethanolamine, alkylphenol ethoxylates (Iconol series), and linear alcohol alkoxylates (Plurafac series).

- Additives affect the viscosity of the compositions differently depending upon the nature of the additive and its concentration. Some additives will affect the initial or final viscosity, whereas others will affect the temperature range of the viscosity response, or both.

- Potassium chloride and acetamide MEA are two examples of additives which decrease the final viscosity of the composition (see Example 30). KCl (0.25%) added to a 1 wt% reversibly gelling polymer composition reduces the viscosity by about 3000 cps. See Figure 6. The humectant, acetamide MEA, lowers the viscosity of a 1 wt% solution by approximately 1,500 cps (see Figure 7).

- Glycerin, ethanol and dimethicone copolymer have been shown to affect the temperature range over which the viscosity response occurs. Glycerin shifts the transition temperature to a slightly lower range from an initial 24-34°C to about 24-30°C, but does not affect the final viscosity (see Example 44). The effect of ethanol on

the viscosity is different at different concentration levels. At 5 wt% and 10 wt% added ethanol, the transition temperature is shifted to lower ranges, e.g., 24-29°C and 20-29°C, respectively. At 20 wt% added ethanol, the composition not only exhibits a lowering of the transition temperature, but also a marked increase in initial and final
5 viscosity. See Figure 8. Dimethicone copolymer (1 wt%) also changed the transition temperature, but in this instance the transition temperature range was raised to 28-41°C. Thus, proper selection of additives permits the formulator to adjust the transition temperature to various ranges.

Those skilled in the art will appreciate that the polymer network compositions of
10 the present invention may be utilized for a wide variety of cosmetic and personal care applications. To prepare a cosmetic composition, an effective amount of cosmetically active agent(s) which imparts the desirable cosmetic effect is incorporated into the reversibly gelling polymer network composition of the present invention. Preferably the selected agent is water soluble, which will readily lend itself to a homogeneous
15 dispersion throughout the reversibly gelling polymer network composition; however, the polymer network has been demonstrated to significantly solubilize or suspend hydrophilic agents in order to improve formulation homogeneity (see Example 36). It is also preferred that the agent(s) is nonreactive with the polymer network composition. For materials which are not water soluble, it is also within the scope of the invention
20 to disperse or suspend powders or oil (lipophilic materials) throughout the polymer network composition. It will also be appreciated that some applications may require a sterile environment. It is contemplated as within the scope of the invention that the reversibly gelling polymer network compositions of the present invention may be prepared under sterile conditions. An additional feature of the reversibly gelling
25 polymer composition is that it is prepared from constituent polymers that have known accepted toxicological profiles.

The poloxamer:poly(acrylic acid) polymer network has been evaluated under Good Laboratory Practice (GLP) standard protocols known in the art for toxicity in animal models and found to exhibit no toxic effects. The results of the toxicity study

are summarized in the following Table 1. The non-toxicity of the polymer network makes it an ideal candidate for use in cosmetic compositions.

Table 1. Toxicity data for 6% poloxamer:poly(acrylic acid) solution at pH 7.

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Reaction Tests	Mode of Testing	Results
Skin sensitization	guinea pig - topical	not a sensitizer
Eye irritation	rabbit - eye instillation	negative
Primary dermal irritation	rabbit - topical	very slight edema (1 on a scale of 1-8)
Acute dermal toxicity	rat - single dose (2g/kg)	no toxicity
Acute oral toxicity	rat - single dose (5g/kg)	no toxicity
AMES test		negative

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Exemplary cosmetic and personal care applications, for which the reversibly gelling polymer network composition may be used include, but are not limited to, baby products, such as baby shampoos, lotions, powders and creams; bath preparations, such as bath oils, tablets and salts, bubble baths, bath fragrances and bath capsules; eye makeup preparations, such as eyebrow pencil, eyeliner, eye shadow, eye lotion, eye makeup remover and mascara; fragrance preparations, such as colognes and toilet waters, powders and sachets; noncoloring hair preparations, such as hair conditioner, hair spray, hair straighteners, permanent waves, rinses, shampoos, tonics, dressings and other grooming aids; color cosmetics; hair coloring preparations such as hair dye, hair tints, hair shampoos, hair color sprays, hair lighteners and hair bleaches; makeup preparations such as face powders, foundations, leg and body paints, lipstick, makeup bases, rouges and makeup fixatives; manicuring preparations such as basecoats and undercoats, cuticle softeners, nail creams and lotions, nail extenders, nail polish and enamel, and nail polish and enamel remover; oral hygiene products such as dentifrices and mouthwashes; personal cleanliness, such as bath soaps and detergents, deodorants, douches and feminine hygiene products; shaving preparations such as aftershave lotion, beard softeners, men's talcum, shaving cream, shaving soap and preshave lotions; skin care preparations such as cleansing preparations, skin antiseptics, depilatories, face and

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neck cleansers, body and hand cleansers, foot powders and sprays, moisturizers, night preparations, paste masks, and skin fresheners; and suntan preparations such as suntan creams, gels and lotions, indoor tanning preparations.

Preparation of the above-named cosmetic compositions and others may be accomplished with reference to any of the cosmetic formulation guidebooks and industry journals which are available in the cosmetic industry. These references supply standard formulations which may be modified by the addition or substitution of the reversible viscosifying polymer network of the present invention into the formulation. Suitable guidebooks include Cosmetics and Toiletries Magazine, Vo. 111 (March, 1996); Formulary: Ideas for Personal Care, Croda, Inc., Parsippany, NJ (1993); and Cosmeticon: Cosmetic Formulary, BASF, which are hereby incorporated in their entirety by reference.

The cosmetic composition may be in any form. Suitable forms include but are not limited to lotions, creams, sticks, roll-on formulations, mousses, aerosol sprays, pad-applied formulations, and film-forming formulations.

As those skilled in the art will appreciate, the foregoing list is exemplary only. Because the reversibly gelling polymer network composition of the present invention is suited for application under a variety of physiological conditions, a wide variety of cosmetically active agents may be incorporated into and administered from the polymer network composition. In addition to the poloxamer:poly(acrylic acid) polymer network, additional cosmetically acceptable carriers may be included in the composition, such as by way of example only, emollients, surfactant, humectants, powders and other solvents. By way of example only, the cosmetic composition also may include additional components, which serve to provide additional aspects of the cosmetic affect or to improve the stability and/or administration of the cosmetic. Such additional components include, but are not limited to, preservatives, abrasives, acidulents, antiacne agents, anti-aging agents, antibacterials, anticaking, anticaries agents, anticellulites, antidandruff, antifungal, anti-inflammatories, anti-irritants, antimicrobials, antioxidants, antiperspirants, antiseptics, antistatic agents, astringents, binders, buffers, additional carriers, chelators, cell stimulants, cleansing agents,

conditioners, deodorants, depilatories, detergents, dispersants, emollients, emulsifiers, enzymes, essential oils, exfoliants, fibers, film forming agents, fixatives, foaming agents, foam stabilizers, foam boosters, fungicides, gellants, glosser, hair conditioner, hair set resins, hair sheen agents, hair waving agents, humectants, lubricants, moisture
5 barrier agents, moisturizers, ointment bases, opacifier, plasticizer, polish, polymers, powders, propellant, protein, refatting agents, sequestrants, silicones, skin calming agents, skin cleansers, skin conditioners, skin healing, skin lightening agents, skin protectants, skin smoothing agents, skin softening agents, skin soothing agents, stabilizers, sunscreen agents, surfactants, suspending agents, tanning accelerators,
10 thickeners, vitamins, waxes, wetting agents, liquefiers, colors, flavors and/or fragrances. Suitable materials which serve the additive functions listed here are well known in the cosmetic industry. a listing of the additive function and materials suitable for incorporation into the cosmetic composition may be found in Appendix A, which is appended hereto at the end of the specification. Further information may be obtained
15 by reference to The Cosmetic Bench Handbook, Cosmetics & Toiletries, C.C. Urbano, editor, Allured Publ. Corp., 1996, which is hereby incorporated in its entirety by reference.

A brief description of some preferred additives and cosmetically active agents follows. The compositions of the invention include a safe and effective amount of a
20 cosmetically active agent. "Safe and effective", as it is used herein, means an amount high enough to significantly positively modify the condition to be treated or the cosmetic effect to be obtained, but low enough to avoid serious side effects.

Preservative can be desirably incorporated into the cosmetic compositions of the invention to protect against the growth of potentially harmful microorganisms. Suitable
25 preservatives include, but are not limited to, alkyl esters of parahydroxybenzoic acid, hydantoin derivatives, parabens, propionate salts, triclosan tricarbonyl, tea tree oil, alcohols, farnesol, farnesol acetate, hexachlorophene and quaternary ammonium salts, such as benzaldehyde, and a variety of zinc and aluminum salts. Cosmetic chemists are familiar with appropriate preservatives and may select that which provides the

required product stability. Preservatives are preferably employed in amounts ranging from about 0.0001% to 2% by weight of the composition.

Emollients can be desirably incorporated into the cosmetic compositions of the invention to provide lubricity to the formulation. Suitable emollients may be in the form of volatile and nonvolatile silicone oil, highly branched hydrocarbons and synthetic esters. Amounts of emollients may be in the range of about 0.1-30 wt%, and preferably about 1-20 wt%. By way of example only, suitable silicones include cyclic or linear polydimethylsiloxanes, polyalkylsiloxanes, polyalkylarylsiloxanes and polyether siloxanes. By way of example only, suitable ester emollients include alkenyl esters of fatty acids, polyhydric alcohols, such as ethyleneoxide mono and di-fatty acid esters, polyethyleneoxide and the like, ether-esters, such as fatty acid esters of ethoxylated fatty alcohols, wax esters, such as beeswax, spermaceti, myristyl myristate and stearyl stearate, and sterol esters such as cholesterol fatty acids.

A variety of oily emollients may be employed in the compositions of this invention. These emollients may be selected from one or more of the following classes:

1. Triglyceride esters such as vegetable and animal fats and oils. Examples include castor oil, cocoa butter, safflower oil, cottonseed oil, corn oil, olive oil, cod liver oil, almond oil, avocado oil, palm oil, sesame oil, squalene, Kikui oil and soybean oil;
2. Acetoglyceride esters, such as acetylated monoglycerides;
3. Ethoxylated glycerides, such as ethoxylated glyceryl monostearate;
4. alkyl esters of fatty acids having 10 to 20 carbon atoms, such as, methyl, isopropyl, and butyl esters of fatty acids, and including hexyl laurate, isohexyl laurate, isohexyl palmitate, isopropyl palmitate, decyl oleate, isodecyl oleate, hexadecyl stearate, decyl stearate, isopropyl isostearate, diisopropyl adipate, diisohexyl adipate, dihexyldecyl adipate, diisopropyl sebacate, lauryl lactate, myristyl lactate, and cetyl lactate;
5. Alkenyl esters of fatty acids having 10 to 20 carbon atoms, such as oleyl myristate, oleyl stearate, and oleyl oleate and the like;
6. Fatty acids having 10 to 20 carbon atoms, such as pelargonic, lauric, myristic, palmitic, stearic, isostearic, hydroxystearic, oleic, linoleic, ricinoleic, arachidic, behenic, and erucic acids and the like;
7. Fatty alcohols having 10 to 20 carbon atoms, such as, lauryl, myristyl, cetyl, hexadecyl, stearyl, isostearyl, hydroxystearyl, oleyl,

- ricinoleyl, behenyl, erucyl, and 2-octyl dodecanyl alcohols are examples of satisfactory fatty alcohols and the like; 8. Fatty alcohol ethers, such as ethoxylated fatty alcohols of 10 to 20 carbon atoms including the lauryl, cetyl, stearyl, isostearyl, oleyl, and cholesterol alcohols, having attached thereto from 1 to 50 propylene oxide groups; 9.
- 5 Ether-esters such as fatty acid esters of ethoxylated fatty alcohols; 10. lanolin and derivative, such as lanolin, lanolin oil, lanolin wax, lanolin alcohols, lanolin fatty acids, isopropyl lanolate, ethoxylated lanolin, ethoxylated lanolin alcohols, ethoxylated cholesterol, propoxylated lanolin alcohols, acetylated lanolin alcohols, lanolin alcohols linoleate, lanolin alcohols ricinoleate, acetate of lanolin alcohols ricinoleate, acetate of
- 10 ethoxylated alcohols-esters, hydrogenolysis of lanolin, ethoxylated hydrogenated lanolin, ethoxylated sorbitol lanolin, and liquid and semisolid lanolin absorption bases and the like; 11. Polyhydric alcohol esters, such as, ethylene glycol mono and di-fatty acid esters, diethylene glycol mono- and di-fatty acid esters, polyethylene glycol (200-6000) mono- and di-fatty acid ester, propylene glycol mono- and di-fatty acid esters,
- 15 polypropylene glycol 2000 monooleate, polypropylene glycol 2000 monostearate, ethoxylated propylene glycol monostearate, glyceryl mono- and di-fatty acid esters, polyglycerol polyfatty esters, ethoxylated glyceryl monostearate, 1,2-butylene glycol monostearate, 1,2-butylene glycol distearate, polyoxyethylene polyol fatty acid ester, sorbitan fatty acid esters, and polyoxyethylene sorbitan fatty acid esters are satisfactory
- 20 polyhydric alcohol esters; 12. Waxes such as beeswax, spermaceti, myristyl myristate, stearyl stearate; 13. Beeswax derivatives, e.g., polyoxyethylene sorbitol beeswax; 14. Vegetable waxes including carnauba and candelilla waxes; 15. Phospholipids such as lecithin and derivatives; 16. Sterol including cholesterol and cholesterol fatty acid esters; 17. Amides such as fatty acid amides, ethoxylated fatty
- 25 acid amides, solid fatty acid alkanolamides.

Humectants may be added to the composition to increase the effectiveness of the emollient, to reduce scaling, to stimulate removal of built-up scale and improve skin feel. By way of example only, suitable humectants include polyhydric alcohols, such as glycerol, polyalkylene glycols, alkylene polyols, their derivatives, propyleneoxide,

30 dipropyleneoxide, polypropyleneoxide, polyethylenoxide, sorbitol, hydroxypropyl

sorbitol, hexylene glycol, 1,3-butyleneglycol, 1,2,6-hexanetriol, ethoxylated glycerol, propoxylated glycerol and the like. The amount of humectant may be in the range of about 0.5-30 wt% and preferably between 1-15 wt%.

In topical skin care applications, a variety of active substances may be advantageously employed. By way of example, only suitable active agents which may be incorporated into the cosmetic composition include anti-aging active substances, anti-wrinkle active substances, hydrating or moisturizing or slimming active substances, depigmenting active substances, substances active against free radicals, anti-irritation active substances, sun protective active substances, anti-acne active substances, firming-up active substances, exfoliating active substances, emollient active substances, and active substances for the treating of skin disorders such as dermatitis and the like.

By way of example only, in the case of hydration, one or more moisturizers may be used, such as glycerin or urea, in combination with one or more precursor agents for the biosynthesis of structural proteins, such as hydroxyproline, collagen peptides, and the like.

By the way of example only, in the case of slimming, at least one ketolytic agent or an alpha-hydroxyacid such as a salicylic acid or 5-n-octanoic salicylic acid may be used in combination with at least one liporegulating agent such as caffeine.

By way of example only, in the case of depigmentation, at least one keratolytic agent is used in combination with a depigmenting agent such as hydroquinone, tyrosinase inhibitor (koscic acid), kojic acid and sodium metabisulfite and the like.

By way of example only, in the case of protection against free radical agents, vitamin E (against CO_2 radicals), superoxide dismutase (against O_2 free radicals) and sugar and caffeine (against OH free radicals).

By way of example only, in the case of anti-aging, moisturizers, sunscreens, alpha-hydroxyacids, salicylic acid or surface restructuring agents may be used in combination with enzymes for the repair of DNA, vascular protective agents or phospholipids rich in oligoelements and polyunsaturated fatty acids.

By way of example only, in the case of anti-acne agents, keratolytics, such as salicylic acid, sulfur, lactic acid, glycolic, pyruvic acid, urea, resorcinol and N-acetylcysteine, and retinoids, such as retinoic acid and its derivatives may be used.

By way of example only, in the case of anti-inflammation, non-steroidal anti-inflammatory agents (NSAIDS) may be used, such as propionic acid derivatives, acetic acid, fenamic acid derivatives, biphenylcarboxylic acid derivatives, oxicams, including but not limited to aspirin, acetaminophen, ibuprofen, naproxen, benoxaprofen, flurbiprofen, fenbufen, ketoprofen, indoprofen, piroprofen, carprofen, and buclocic acid and the like.

By way of example only, in the case of antibiotic and antimicrobials may be included in the composition of the invention. Antimicrobial drugs preferred for inclusion in compositions of the present invention include salts of β -lactam drugs, quinolone drugs, ciprofloxacin, norfloxacin, tetracycline, erythromycin, amikacin, triclosan, doxycycline, capreomycin, chlorhexidine, chlortetracycline, oxytetracycline, clindamycin, ethambutol, hexamidine isethionate, metronidazole, pentamidine, gentamicin, kanamycin, lineomycin, methacycline, methanamine, minocycline, neomycin, netilmicin, paromomycin, streptomycin, tobramycin, miconazole and amantadine and the like.

By way of example only, in the case of sunscreen protection, suitable agents include 2-ethylhexyl p-methoxycinnamate, 2-ethylhexy N,N-dimethyl-p-aminobenzoate, p-aminobenzoic acid, 2-phenyl p-methoxycinnamate, 2-ethylhexyl octocrylene, oxybenzone, homomenthyl salicylate, octyl salicylate, 4,4'-methoxy-t-butylidibenzoylmethen, 4-isopropyl dibenzoylmethane, 3-benzylidene camphor, 3-(4-methylbenzylidene) camphor, titanium dioxide, zinc oxide, silica, iron oxide, and mixtures thereof and the like. The sunscreens disclosed therein have, in a single molecule, two distinct chromophore moieties which exhibit different ultra-violet radiation absorption spectra. One of the chromophore moieties absorbs predominantly in the UVB radiation range and the other absorbs strongly in the UVA radiation range. These sunscreens provide higher efficacy, broader UV absorption, lower skin penetration and longer lasting efficacy relative to conventional sunscreens. Generally,

the sunscreens can comprise from about 0.5% to about 20% of the compositions useful herein. Exact amounts will vary depending upon the sunscreen chosen and the desired Sun Protection Factor (SPF). SPF is a commonly used measure of photoprotection of a sunscreen against erythema.

5 By way of example only, in the case of sunless tanning agents include, dihydroxyacetone, glyceraldehyde, indoles and their derivatives, and the like.

The composition may include cleansing surfactants. Cleansing surfactants are cationic, anionic, amphoteric or non-ionic surfactants which are water-soluble and produce a consumer-acceptable amount of foam. Non-ionic surfactants are well-known materials and have been used in cleansing compositions. Therefore, suitable non-ionic surfactants include, but are not limited to, compounds in the classes known as alkanolamides, block copolymers of ethylene and propylene, ethoxylated alcohols, ethoxylated alkylphenols, alkyl polyglycosides and mixtures thereof. In particular, the non-ionic surfactant can be an ethoxylated alkylphenol, i.e., a condensation product of an alkylphenol having an alkyl group containing from about 6 to about 12 carbon atoms in either a straight chain or branched chain configuration with ethylene oxide, the ethylene oxide being present in an amount equal to at least about 8 moles ethylene oxide per mole of alkylphenol. Examples of compounds of this type include
15 nonylphenol condensed with about 9.5 moles of ethylene oxide per mole of phenol;
20 dodecylphenol condensed with about 12 moles of ethylene oxide per mole of phenol;
dinonylphenol condensed with about 15 moles of ethylene oxide per mole of phenol;
octylphenol condensed with about ten moles of ethylene oxide per mole of phenol; and
diisooctyl phenol condensed with about 15 moles of ethylene oxide per mole of phenol.

A wide variety of acids, bases, buffers, and sequestrants can be utilized to adjust and/or maintain the pH and ionic strength of the compositions useful in the instant invention. Materials useful for adjusting and/or maintaining the pH and/or the ionic strength include sodium carbonate, sodium hydroxide, hydrochloric acid, phosphoric acid, sulfuric acid, acetic acid, sodium acetate, sodium hydrogen phosphate, sodium dihydrogen phosphate, citric acid, sodium citrate, sodium bicarbonate, triethanolamine,
25 EDTA, disodium EDTA, tetrasodium EDTA, and the like.
30

The polymer network may be useful as a solubilization agent in cosmetic and personal care applications. A self-assembling system comprising the reversibly gelling polymer network exhibits thermogelation, pH sensitivity, and the ability to solubilize hydrophobic agents in aqueous media. When poloxamer is copolymerized with poly(acrylic acid) (PAA) according to the invention, the resulting copolymer network is bioadhesive and can be applied in a number of therapies. The materials described in this invention combine "reverse" thermoviscosification mucoadhesion, solubilization of hydrophobic and difficult to manage moieties, easy formulation, and protection of agents from degradation to provide a superior medium for cosmetic and personal care products.

The reversible viscosification of the polymer network at elevated temperatures makes the materials idea for use as thickening agents in cosmetic and personal care products at any temperature above the transition. Another use of the "thickening" of solutions containing the polymer network as a thickener supplement in emulsions. Currently, emulsifiers are often negatively affected by increased temperatures. An additive with reverse thermal viscosification properties, however, would react in exactly the opposite way, increasing its ability to emulsify as it gained three-dimensional structure upon heating above its transition temperature.

In the applications where the reversibly gelling polymer composition can act as a surfactant, the polymer network will have the ability to act as a primary emulsifier without any (or with very little) addition of traditional surfactant. The responsive polymer network will also act as a stabilizer for oil soluble ingredients that would conventionally need to be solubilized by oils in formulation. The hydrophobic portion of the polymer network (PPO) forms domains which act as reservoirs for an oil-soluble or hydrophobic additive, such as an oil droplet, as is illustrated in Figure 9. These two features of the material of the invention would enable it to be used as a base in a cosmetic formulation that would be non-greasy due to lack of oils, such as petrolatum and mineral oil. The increase in viscosity above the transition temperature adds structure and yield value to the water phase and results in a highly stable emulsion.

Thus, poloxamer:poly(acrylic acid) polymer network compositions are valuable materials in the formulation of cosmetic and personal care products. In particular, they may be useful as rheology modifiers, provide a cushioning effect on the skin, offer barrier properties and controlled release of actives. In addition, the polymer composition may serve as a surfactant and is compatible with most ingredients used in the cosmetic industry.

The above properties of the poloxamer:poly(acrylic acid) polymer network provides a cosmetic composition that spreads evenly and smoothly and which leaves a lubricious feel to the skin. A sensory evaluation was conducted with seven random volunteers in order to determine the sensory effect of a cream formulation on the skin. An oil-free cosmetic formulation was prepared substantially as set forth in Example 33(b) and was compared to Nivea Oil Free, a product of Beiersdorf of Germany. Volunteers placed unmarked samples on the skin and evaluated the formulation based upon its feel and texture. The samples were rated on a scale of 1 (bad) to 5 (good). The oil-free cosmetic formulation of the present invention scored equally to the Nivea Oil Free moisturizing product. Both samples scored a 3.5 on the rating scale.

The observed thermal behavior of the reversibly gelling polymer network suggests that the increase in viscosity is due to aggregation of the hydrophobic portion of the poloxamer at the transition temperature which, because of bonding with the poly(acrylic acid) component, serve as temporary cross-links which physically bridge adjacent chains of poly(acrylic acid) to provide a viscous gel-like extended polymer structure. The aggregation process may be understood as occurring as shown in Figure 10, in which a backbone 20 represent poly(acrylic acid), a thin band 24 represents the hydrophobic poly(propylene) glycol region of the poloxamer and a thick band 26 represents the hydrophilic poly(ethylene glycol) region of the poloxamer. Below the transition temperature, the polymer network is randomly arranged, as is shown in Figure 10(a). At or above the transition temperature, the hydrophobic regions 24 associate to form aggregations or micelles 28, as is shown in Figure 10(b). The association increases the effective molecular weight of the polymer network composition with the corresponding increase in viscosity.

A general method of making the poloxamer:PAA polymer network compositions of the present invention comprises solubilization of the poloxamer in acrylic acid monomer, followed by polymerization of the monomer to PAA. Polymerization may be accomplished by addition of a polymerization initiator or by irradiation techniques.

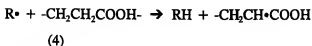
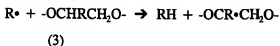
- 5 The initiator may be a free radical initiator, such as chemical free radical initiators and UV or gamma radiation initiators. Conventional free radical initiators may be used according to the invention, including, but in no way limited to ammonium persulfate, benzoin ethyl ether, benzyl peroxide, 1, 2'-azobis(2,4-dimethylpentanitrile) (Vazo 52) and azobisisobutyronitrile (AIBN). Initiation may also be accomplished using cationic
10 or ionic initiators. many variations of this method will be apparent to one skilled in the art and are contemplated as within the scope of the invention. For example, the poloxamer component may be dissolved in an acrylic acid/water mixture instead of pure monomer. It may be desirable to remove unreacted monomer and/or free poloxamer from the resultant polymer network. This may be accomplished using conventional
15 techniques, such as, by way of example, dialysis or sohxlet extraction.

- Without intending to be bound by a particular mechanism or structure, the following scheme represents a possible chemical mechanism for the formulation of the system here described. These mechanisms are presented by way of explanation and are no way limiting of the invention. It is contemplated that these or other mechanistic
20 routes may in fact occur in the formation of the polymer network of the present invention.

I. Initiation



25 II. Hydrogen Abstraction



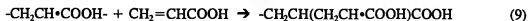
30 III. Chain Transfer



IV. Propagation



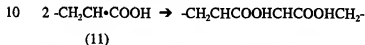
5 V. Side Chain Branching Off AA Backbone



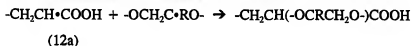
VI. AA Branching Off Poloxamer Backbone



VII. Homogenous Termination



VIII. Heterogenous Termination with Bonding of Pluronic to PAA



15

The scheme for bonding of poloxamer to acrylic acid may involve initiation (Eq. 1), hydrogen abstraction from the propylene or ethylene moiety of the poloxamer (Eq. 3), and attachment to acrylic acid via addition across the unsaturated bond (Eq. 10). Propagation (Eq. 8) leads to the final PAA.

20 Alternatively, the mechanism may proceed by initiation according to Eqs. (1) and (2), propagation to form PAA (Eq. 8), a chain transfer reaction to generate a reactive poloxamer moiety (Eq. 5), followed by addition of the reactive poloxamer moiety to the unsaturated bond of acrylic acid (Eq. 10) and subsequent propagation of the PAA chain.

25 Thus, the polymer network may include a plurality of poly(acrylic acid) units bounded to a single poloxamer unit, or alternatively, a plurality of poloxamer units bound to a single PAA backbone. Combinations of these alternatives are also a possibility.

30 Reverse phase polymerization may be used to prepare polymer network beads by dispersion of the poloxamer and acrylic acid monomer mixture in a nonpolar solvent

such as hexane or heptane. The aggregating polymer/monomer solution is dispersed with agitation in the nonpolar solvent in order to suspend droplets of the solution. Polymerization of the monomer is initiated by conventional means (i.e., addition of an initiator or irradiation) in order to polymerize the monomer and form responsive
5 polymer network beads. See U.S.S.N. 08/276,532 filed July 18, 1995 and entitled "Useful Responsive Polymer Gel Beads" for further information on the preparation of polymer gel beads, herein incorporated by reference. Such a method may be particularly desirable to provide a heat sink for the heat generated in the exothermic polymerization reaction.

10 The polymer network complexes and aqueous gelling solutions of the present invention may be understood with reference to the following examples, which are provided for the purposes of illustration and which are in no way limiting of the invention.

Example 1. This example describes the synthesis of a polymer network and an
15 aqueous responsive polymer network solution prepared using a triblock polymer of poly(ethyleneoxide) and poly(propyleneoxide), Pluronic® F27 polyol, and poly(acrylic acid). This example also characterizes the gelation and the physical properties of the resultant polymer network.

Synthesis. Block copolymer of poly(propyleneoxide) (PPO) and
20 poly(ethyleneoxide) (PEO) having triad ABA structure $(\text{PEO})_A(\text{PPO})_B(\text{PEO})_A$ (Pluronic® F127 NF polyol, Poloxamer 407 NF polyol, where "F" means Flakes, "12" means $12 \times 300 = 3600$ - MW of the PPO section of the block copolymer, "7" PEO in the copolymer is 70 wt%, and nominal molecular weight is 12,600) from BASF (3.0 g) was dissolved in 3.0 g acrylic acid (Aldrich). This represents a substantially 1:1 weight
25 ratio of Pluronic® F127 polyol and poly(acrylic acid). The solution was deaerated by N_2 bubbling for 0.5 h and following addition of 100 ml of freshly prepared saturated solution of ammonium persulfate (Kodak) in deionized water was kept at 70°C for 16 h resulting in a transparent polymer.

Viscosity measurements. A known amount of the resultant polymer was
30 suspended in 100 ml deionized water into which NaOH was added. Following swelling

for 3 days while stirring, the pH of the resulting fine suspension was adjusted to 7. Samples of 15 ml each were taken, and pH in each vial was adjusted to desired value by addition of 1 M HCl or NaOH. Samples were then kept overnight and their viscosities were measured at different temperatures using Brookfield viscometer using either an
5 SC4-18 or an SC4-25 spindle.

A control experiment was done with a physical blend of Pluronic® F127 polyol and poly(acrylic acid) (MW 450,000) available from Aldrich. Pluronic® F127 polyol and poly(acrylic acid) were dissolved together in deionized water at 1 wt% total polymer concentration and the resultant solution was adjusted to pH 7, stirred and kept
10 in refrigerator. The responsiveness of the polymer network composition and the physical blend to temperature and pH is illustrated in figs. 1, 11, and 12. Figs. 1 and 2 clearly demonstrate that the synthetic route outlined above resulted in a polymer network system that is sensitive to pH and temperature of the environment. Note that the liquid-gel transition is very sharp, occurring over a very small temperature change
15 of pH (see Figure 11). Figure 12 is a viscosity vs. temperature graph comparing the gelling characteristics of the responsive polymer network composition and the physical blend. The blend prepared by physically mixing the triblock PEG/PPG/PEG polymer and poly(acrylic acid) did not exhibit viscosifying effect either as a function of temperature or pH.

20 It was generally observed that 0.5 - 5 wt% polymer network compositions made of Pluronic® F127 polyol and poly(acrylic acid) viscosify at temperatures of around 30°C and higher if pH is adjusted to 6 or higher. The gelling effect was observed in polymer network compositions standing 3 months or longer. Repeated heating and cooling of responsive polymer network compositions did not cause deterioration of the
25 polymer network or the gelling effect. Solutions of either Pluronic® F127 polyol or poly(acrylic acid) (1-5 wt% in water, adjusted to pH 6 or higher) or physical blends of the two lacked the reverse thermal gelling effects found for polymer network compositions.

Example 2. this example describes a standard operating procedure for the
30 manufacture of the reversible gelling polymer network.

The procedure is based upon a 50 liter production. A NaOH solution was prepared by dissolving 131.8 g NaOH pellets in 131.8 mL DI water (50% solution). The NaOH was allowed to dissolve completely. The NaOH solution will be used to convert a percentage of the acrylic acid to sodium acrylate in situ. Acrylic acid monomer (4 kg) is charged into a monomer feed tank and agitated at 250 rpm. NaOH is added slowly. The precipitate formed as the acrylic acid is neutralized to sodium acrylate is allowed to dissolve. Pluronic® F 127 (3.5 kg) is slowly added to the monomer feed tank. Pluronic® F127 is dissolved under continued agitation. Norpar 12 (a refined C-12 alkane) is added to the reaction vessel (37 L). The mixture is agitated at 100 rpm. Stabilizer solution of Ganex V-126 is prepared in 2L Norpar 12 and added to the reactor under agitation.

A reaction vessel was degassed using a nitrogen sparge introduced from the bottom of reactor and was continued throughout the reaction. Initiator (13.63 g Lauryl peroxide and 4.23 g Vazo 52 in 0.7 kg acrylic acid monomer) is introduced into the monomer solution. the monomer solution was transferred to the reaction vessel. Agitation was increased to 150 rpm. Nitrogen sparging continued for an additional 20 minutes, and then heating began. heating began at a rate of 0.5 -1.0°C/min up to 75°C. The reaction began to exotherm at about 45-50°C and is allowed to continue without cooling until a maximum is reached. It is then cooled to 75°C using forced cooling. The reaction continued for 12 hours and was then cooled to 35°C. The slurry was transferred into pails and the polymer beads were allowed to settle.

The slurry was filtered through Buchner Funnels with filter paper (11 µm pore size) until the bulk of the Norpar had been removed from the beads. The beads were washed three times with heptane. The filtered beads were transferred to a Pyrex drying tray and spread on the tray in a uniform layer. The beads were dried under vacuum for 4 hours at 40-50°C. The dried beads were analyzed as follows.

Elemental analysis. The elemental analysis was performed by Quantitative Technologies, Inc., Whitehouse, NJ using a Perkin Elmer 2400 CHN Elemental Analyzer. Analysis provided C (52.49%), H (7.50%), N (<0.05%), the balance assumed to be oxygen (39.96%).

Thermal Gravimetric Analysis (TGA). The TGA method was performed by Massachusetts Material Research, Inc., West Boylston, MA using a Dupont TGA model 295. The assay was run using a temperature ramp from 30 to 500°C/min. The resolution for the system was set to 4 (1.0°C/min for all slope changes). The data was analyzed using the first derivative of the curve and using maxima and minima to mark transitions. The moisture content was also calculated in this manner. The first derivative yielded three maxima. The first transition (moisture) was 3.0% by weight, the second transition was 14.0% by weight, and the third was 67.02% by weight. Residue (15.98%) remained.

Molecular weight determination by gel permeation chromatography (GPC). The molecular weight was determined by GPC on a Hewlet Packard 1100 Liquid Chromatography system with a Viscotek T60 Triple Detector system. Three Waters Ultrahydrogel columns, 1000, 500 and 250 Å, were used for the separation. The mobile phase was 0.1 M NaNO₃ and 0.01 M K₂HPO₄ salt solution, pH adjusted with phosphoric acid to a pH of 8.0 ± 0.1. the flow rate for the separation was 0.9 mL/min. The column temperature was maintained at 15°C. The injection volume for the assay was 50 µL. A PEG molecular weight standard of 23,000 Daltons was used to align the detectors. The result for the assay were:

M_n: 341,700 Daltons

M_p: 1,607,000 Daltons

M_w: 2,996,000 Daltons

Free poloxamer determination by GPC. The amount of free (unbound) poloxamer in the polymer matrix was determined using the above GPC method and comparing the poloxamer peaks to that of a standard poloxamer solution. The typical result is approximately 18-22% free poloxamer by weight.

The effect of both the bonded and non-bonded poloxamer on the gelation properties of the responsive polymer network has been determined by extraction of the non-bonded poloxamer from the material. Such extraction studies have established that the graft co-polymer alone exhibits the characteristic reverse thermal gelation of the composition; however, the presence of non-bonded poloxamer component modulates

the gelation process. The non-bonded poloxamer component can affect the temperature of transition (from liquid to gel) and the degree of transition and assists in a more controlled and reproducible transition.

Bound poloxamer determination by ethylene oxide (EO) titration. The EO titration was performed as follows. A 5 gm sample of the product polymer was extracted in dichloroethane for three hours at reflux temperatures. The solid is removed and dried under a vacuum for 12 hours at room temperature. The dry material is then analyzed using ASTM method D 2959-95, "Standard Test Method for Ethylene Oxide Content". The amount of EO in the sample is related to the amount of poloxamer bound to the polymer. The typical result is approximately 15% by weight of EO.

The relative amount of free poloxamer may be varied dependent upon the relative proportions of starting materials and the method of polymerization. Although the residual solids presumably contain only poloxamer which is bounded to the poly(acrylic acid), i.e., a graft co-polymer, the material still shows strong viscosification when it is neutralized and dissolved in water. However, the temperature of viscosification is increased substantially and the degree of viscosification per gram of total solids is increased by removal of free poloxamer. Thus, the free poloxamer plays a role in modifying the extent and temperature of viscosification. The poloxamer undergoes conformational changes and changes to the critical micelle concentration as a function of temperature. The poloxamer will change from an open, non-aggregated form to a micellar, aggregated form with changes in temperature.

Residual acrylic monomer determination by gas chromatography (GC). The residual acrylic acid monomer was determined by GC analysis using a Hewlett Packard GC 5890A, using a HP-FFDAP-TPA 10 m x 0.52 mm x 1 μ m column. The sample was extracted and run in methanol. Using an internal standard ratio, the sample was compared to a one point calibration. The typical results for this assay were below 70 ppm acrylic acid monomer.

Residual Norpar solvent by GC. The residual Norpar in the sample was determined by GC using the above method and comparing the Norpar peaks to that of a standard. The typical results were below 1.5 wt%.

UV-vis spectrum. Optical clarity data of UV-vis spectrophotometer was obtained. A 1.0% solution in water was prepared and measured at 420 nm. Transmittance (%) was typically greater than 90%.

- Differential scanning calorimetry (DSC). The DSC was performed by Massachusetts Material Research, Inc., West Boylston, MA using a temperature ramp from 30 to 350°C at 5°C/min. The resolution for the system was set to 4 (1.0°C/min for all slope changes). The assay yielded one endothermic event at 265°C, typically 270 J/g.

- Examples 3-9. These examples describe the synthesis of several reversible thermal gelling polymer networks prepared using a variety of poloxamers and poly(acrylic acid). The gelation and the physical properties of the resultant polymer network compositions are reported in Table 2.

Table 2

Example	Poloxamer	Poloxamer Composition	Polox- amer: PAA	Trans. Temp.	Comments
3	Pluronic® F88 Prill polyol	2400 MW PPO; 80 wt% PEO; nominal MW 11,400	1:1	48°C	viscosity response curve shown in Figure 13
4	Pluronic® F127 NF polyol	3600 MW PPO; 70 wt% PEO; nominal MW 12,600	1:1	30°C	pentaerythritol triallyl ether crosslink agent used
5	Pluronic® P104 polyol	3000 MW PPO; 40 wt% PEO; nominal MW 5,900	1:1	28°C	viscosity response curve shown in Figure 14
6	Pluronic® P123 polyol	3600 MW PPO; 30 wt% PEO; nominal MW 5,750	1:1	25°C	viscosity response curve shown in Figure 15
7	Pluronic® F127/ Pluronic® F108 polyol blend (1:1)	as above	1:1.7	42°C	polymer solid formed, dried; resolubilized in neutralizing solution
8	Pluronic® F88 polyol	as above	1:1.7	80°C	polymer solid formed, dried; resolubilizing in neutralizing solution
9	Pluronic® F127/ Pluronic® F88 polyol blend (1:1)	as above	1:1.7	85°C	polymer solid formed, dried; resolubilizing in neutralizing solution

Example 10. The following example demonstrates the effect of hydrophilic/hydrophobic ratio on the gelling temperature. Polymer network compositions were prepared from the following poloxamers shown in Table 3.

Table 3. Composition of Poloxamers Investigated.

triblock polyol polymer composition	MW of PPO block	wt% of PEO block
P103 (PEO) ₃₇ (PPO) ₃₆ (PEO) ₃₇	3250	50
P104 (PEO) ₂₅ (PPO) ₃₆ (PEO) ₂₅	3250	40
P105 (PEO) ₁₆ (PPO) ₃₆ (PEO) ₁₆	3250	30

Table 3 shows that in this series, the fraction of PEO is reduced when the molecular weight of the PPO block is kept constant. Linse (*Macromol.* 26:4437-4449 (1993)) report phase diagrams for these copolymers in water were calculated and it was shown that two-phase boundaries corresponding to the beginning of aggregation are almost unaffected by the molecular mass, given a constant PEO/PPO ratio, whereas these boundaries shifted to lower temperature as the PEO content of the polymer is reduced at constant mass. The strong dependence of the PEO/PPO ratio is a consequence of the differing solubilities of PEO and PPO in water at the elevated temperatures. Thus, one would suppose that aggregation that causes viscosification in the responsive polymer network composition should shift to lower temperature as PEO fraction decreases.

The poloxamer (3.0 g) was dissolved in 3.0 g acrylic acid. The solution was deaerated by N₂ bubbling for 20 min. and following addition of the 100:1 of freshly prepared saturated solution of ammonium persulfate in deionized water was kept at 70°C for 16 h resulting in a strong whitish polymer. A sample of the polymer obtained (0.4 g) was suspended in 40 ml deionized water into which NaOH was added. Suspended responsive polymer network particles were allowed to dissolve under constant stirring. The resulting 1 wt% polymer network solution were subjected to the

viscosity measurement at shear rate of 132 or 13.2 sec⁻¹ using a SC4-18 spindle. It can be seen from Figure 16 that, firstly, viscosity of the 1 wt% responsive polymer network solutions before viscosification (at 20-24°C) decreases in the series

(PEO)₃₇(PPO)₃₆(PEO)₃₇(F103) > (PEO)₂₅(PPO)₃₆(PEO)₂₅(F104) >

- 5 (PEO)₁₆(PPO)₃₆(PEO)₁₆(F105) and, secondly, the temperature at which gelation shifts from about 45°C for (PEO)₃₇(PPO)₃₆(PEO)₃₇ to about 35°C for (PEO)₂₅(PPO)₃₆(PEO)₂₅ and (PEO)₁₆(PPO)₃₆(PEO)₁₆. Both results are in excellent agreement with the theory set forth in Linse.

- 10 **Example 11.** The following example is related to release of and active agent from a poloxamer:poly(acrylic acid) polymer network. Drug loading and kinetics of release of the protein hemoglobin from poloxamer:poly(acrylic acid) polymer network is described.

- 15 Synthesis. Pluronic® F127 (3.0 g) was dissolved in 3.0 g acrylic acid. The solution was deaerated by N₂ bubbling for 0.5 h and following addition of 100 Fl of freshly prepared saturated solution of ammonium persulfate (Kodak) in deionized water was kept at 70°C for 16 h resulting in a transparent polymer. The resultant responsive polymer network obtained (5 g) was suspended in 95 ml deionized water into which NaOH was added. The resulting suspension was allowed to swell for 7 days.

- 20 Hemoglobin loading and release. A 5 wt% responsive polymer network composition (3 g) was allowed to swell for 16 h in 10 ml of 0.25 mg/ml solution of human hemoglobin (Sigma) in deionized water adjusted to pH 8. The resulting mixture was well shaken and placed into the feed chambers of customized vertical, static, Franz-like diffusion cells made of Teflon. The feed and receiver chambers of the diffusion cells were separated by mesh screens (#2063). The receiver chamber was 25 continuously stirred by a magnetic bar. The cells were allowed to equilibrate to either 25 or 37°C (in an oven). The feed and receiver phases consisted of 1 g of the hemoglobin-loaded responsive polymer network and 6 ml of phosphate-buffered saline (pH 7.4), respectively. In the control experiment, the feed phase was made of 1 g of 0.25 mg/ml hemoglobin solution. After the feed solution had been loaded into the cell, 30 the kinetic time commenced. Samples of the receiver phase was withdrawn from time

to time and their absorbance was measured spectrophotometrically at 400 nm. To calculate hemoglobin concentrations, corresponding calibration curves (absorbance in PBS versus hemoglobin concentration) were generated. The results of the kinetic experiment are presented in Figure 17. It can be seen that the rate of hemoglobin release from the polymer network was substantially lowered at 37°C when compared to that at 25°C, because of viscosity increase in the polymer network at elevated temperatures (see Figure 1). The protein released from the polymer network composition still retained its native structure, as was determined by comparison of UV-vis spectra of release hemoglobin and natural hemoglobin.

Example 12. The following example is related to release of an active agent from a poloxamer:poly(acrylic acid) polymer network. Drug loading and kinetics of release of the protein lysozyme from a polymer network is reported.

Lysozyme loading and release. A 5 wt% responsive polymer network composition (3 g) was allowed to swell for 16 h in 10 ml of 1 mg/ml solution of chicken egg-white lysozyme (Sigma) and 1.5 mg/ml sodium dodecyl sulfate (Aldrich) in deionized water adjusted to pH 8.5. The resulting mixture was well shaken and placed into the feed chambers of customized vertical, static, Franz-like diffusion cells made of Teflon. The feed and receiver chambers of the diffusion cells were separated by mesh screens (#2063). The receiver chamber was continuously stirred by a magnetic bar. The cells were allowed to equilibrate to either 25 or 37°C (in an oven). The feed and receiver phases consisted of 1 g of the lysozyme-loaded responsive polymer network and 6 ml of phosphate-buffered saline (pH 7.4), respectively. In the control experiment, the feed phase was made of 1 g of 1 mg/ml lysozyme solution. After the feed solution had been loaded into the cell, the kinetic time commenced. Samples were withdrawn and their absorbance measured spectrophotometrically at 280 nm. A calibration curve was prepared for lysozyme concentration ranging from 0 mg/ml to 0.5 mg/ml in phosphate buffered saline. The results of the kinetic experiment are presented in Figure 18. It can be seen that the rate of lysozyme release from the responsive polymer network composition was substantially lowered at 37°C when

compared to that at 25°C, because of viscosity increase in responsive polymer network at elevated temperatures (see Figure 1).

In order to demonstrate the retention of the enzymatic activity of lysozyme, the lysozyme released from the responsive polymer network composition was assayed using
5 Micrococcus lysodeikticus cells and compared to that of original lysozyme. The enzymatic activity of lysozyme was the same, within the error of the assay (15%), as that of the original lysozyme. Control without lysozyme in presence of sodium dodecyl sulfate did not show any appreciable lysis of the cells.

Example 13. The following example is related to release of an active agent
10 from a poloxamer:poly(acrylic acid) polymer network. Drug loading and kinetics of release of insulin from a responsive polymer network composition is reported.

Insulin loading and release. A 5 wt% responsive polymer network composition (3 g) was allowed to swell for 15 h in 10 ml of 5 mg/ml solution of bovine Zn²⁺-insulin (Sigma) in deionized water adjusted to pH 7. The resulting mixture was well shaken
15 and placed into the feed chambers of customized vertical, static, Franz-like diffusion cells made of Teflon. The feed and receiver chambers of the diffusion cells were separated by mesh screens (#2063). The receiver chamber was continuously stirred by a magnetic bar. the cells were allowed to equilibrate to either 25 or 37°C (in an oven). The feed and receiver phases consisted of 1 g of the insulin-loaded responsive polymer
20 network and 6 ml of phosphate-buffered saline (pH 7.4), respectively. In the control experiment, the feed phase was made of 1 g of 5 mg/ml insulin solution. After the feed solution had been loaded into the cell, the timing commenced. Samples were withdrawn and their absorbance was measured spectrophotometrically at 280 nm. A calibration curve was prepared for insulin concentration ranging from 0 mg/ml to 1.25
25 mg/ml in phosphate buffered saline. The results of the kinetic experiment are presented in Figure 19. The rate of insulin release from responsive polymer network was substantially lowered at 37°C when compared to that at 25°C, because of viscosity increase in responsive polymer network at elevated temperatures (see Figure 1).

Example 14. This example demonstrates the preparation of a sterile reversibly
30 gelling polymer network aqueous composition and the stability of the composition to

sterilization. The polymer network is prepared as described in Example 1, except that the composition is prepared at 2 wt% Pluronic® F127 polyol/poly(acrylic acid). After dissolution of the 2 wt% polymer network in water, the viscosity is measured. The composition then is sterilized by autoclaving at 121°C, 16 psi for 30 minutes.

- 5 Viscosity is determined after sterilization. The corresponding curves for viscosity (a) before and (b) after sterilization are shown in Figure 20 and establish that minimal change in the viscosity profile of the material has occurred with sterilization.

Examples 15-30. These examples show additives which may be used to affect the transition temperature overall viscosification of the polymer network composition.

- 10 A 1 wt% polymer network was prepared in deionized water at pH 7 in which a variety of additives were included in the composition. The effect of the additive was determined by generation of a Brookfield viscosification curve. Results are reported in Table 4.

Table 4.

Example No.	Additive (wt%)	Effect of additive on:	
		Transition Temp. (°C)	Final Viscosity (% change)
15	1,2-methyl pyrrolidone (5)	I (1.8)	N
	Rhodapex CO-436 (2)	I (1.6)	N
	Dow Corning 190 (2)	I (5)	I (150)
	isopropyl alcohol (0.5)	I (3.1)	I (45)
20	Pluronic® L122 (1)	D (4.4)	D (13)
	Pluronic® F88 (1)	N	I (41)
	Tween 80 (0.5)	N	I (18)
	Germaben® II (1)	D (9)	I (100)
	Iconol NP-6 (1)	D (9)	I (500)
25	Plurafac C-17 (0.5)	I (5.2)	D (36)
	Dow Corning 193 (0.75)	I (4.1)	D (12)
	glycerin (5)	D (2)	N-

Example No.	Additive (wt%)	Effect of additive on:	
		Transition Temp. (°C)	Final Viscosity (% change)
27	UC 50-HB 170/EO/PO random copolymer (0.5)	N	N
28	PVP K15 (1)	N	N
29	MAPTAC (1)	N	D (8)
30	potassium chloride (0.25)	N	D (34)

I = increase; D = decrease; and N = no change

Example 31. Because of the surfactant nature of the polymer network composition coupled with the gelation effect of the polymer network composition, it is possible to prepare formulations which are 100% water-based, but which are lubricious and thick.

Formulations including a nonionic surfactant formulation: An O/W (oil-in-water) emulsion was made by combining the following ingredients utilizing conventional mixing techniques:

Table 5.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Emulsifying Wax NF ¹	2.5
Mineral Oil	5.0

¹ Polowax available from Croda

Into a vessel equipped with a high efficiency homogenizer, the formula amount of all ingredients is added, water is added to 100% w/w and allowed to mix to homogeneity. This formulation contains a nonionic surfactant and gives an emulsion that is fluid at room temperature but viscifies above 32°C.

Formulations including a cationic surfactant formulation: An O/W (oil-in-water) emulsion was made by combining the following ingredients utilizing conventional mixing techniques:

Table 6.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Behentrimonium Methosulfate (and) Cetearyl alcohol ¹	2.5
Mineral Oil	5.0

¹Incroquat Behenyl TMS available from Croda

Into a vessel equipped with a high efficiency homogenizer, the formula amount of all ingredients is added and allowed to mix to homogeneity. This formulation contains a cationic surfactant and gives an emulsion that is fluid at room temperature but viscosifies above 32°C.

Formulations including an anionic surfactant formulation: An O/W (oil-in-water) emulsion was made by combining the following ingredients utilizing conventional mixing techniques:

Table 7.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Cetearyl Phosphate (and) Cetearyl alcohol ¹	2.5
Mineral Oil	5.0

¹Crodafos CES available from Croda

Into a vessel equipped with a high efficiency homogenizer, the formula amount of all ingredients is added, water is added to 100% w/w and allowed to mix to homogeneity. This formulation contains an anionic surfactant and gives an emulsion that is fluid at room temperature but viscosifies above 32°C.

Example 32. Acne Medication: An oil-free, clear, anti-acne treatment is made by combining the following ingredients utilizing conventional mixing techniques:

Table 8.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Glycerin USP	5.0
Salicylic Acid	2.0
DL-Panthenol	0.5
Germaben® II ¹	0.1
Disodium EDTA	0.2
USP Purified Water	72.2

¹Germaben® II available from Sutton Laboratories

To one vessel, equipped with a Lightnin' Mixer with a 3 blade paddle prop, the full amount of USP Purified Water to 100% w/w is added. While maintaining the temperature, with moderate to vigorous mixing, the formula amount of Disodium EDTA, Citric Acid, DL-Panthenol, Glycerin, Salicylic Acid, and Germaben® II is added. These materials are allowed to dissolve at 50°C. After dissolution, the vessel is then cooled to 20°C. To another vessel, equipped with a high efficiency homogenizer, the formula amount of responsive polymer network is added. The responsive polymer network vessel is then cooled to 4°C. After cooling, while vigorously homogenizing, the contents of the first vessel is added to the second vessel, and allowed to mix to homogeneity.

The composition displays a flowable clear jelly appearance with excellent spreadability and absorption characteristics at room temperature, and after heating the formulation to 32°C, the composition thickens to a gel-like consistency.

Example 33. (a) Oil-free Moisturizer (formulation D): An oil-free, lubricous moisturizer was made by combining the following ingredients utilizing conventional mixing techniques:

Table 9.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Glycerin USP	5.0
PPG-2 Myristyl Ether Propionate	3.0
DL-Panthenol	0.5
Germaben® II ¹	0.1
Disodium EDTA	0.2
Citric Acid	0.01
USP Purified Water	71.19

¹Germaben® II available from Sutton Laboratories

The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The viscosity vs. temperature curve is shown in Figure 21 and demonstrates that addition of adjuvants to the composition significantly enhances the responsive polymer network maximum viscosity (>900,000 cps). The use of the poloxamer:poly(acrylic acid) polymer network in the formulation also imparts a unique viscosification effect after application to the skin, which is not evident in typical commercial O/W emulsion formulations (See Figure 21b).

(b) Oil-free Moisturizer (formulation II): An oil-free, lubricous moisturizer was made by combining the following ingredients utilizing conventional mixing techniques:

Table 10.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	20.0
Glycerin USP	5.0
Carbopol 980	1.0

Ingredient	% w/w
D-Panthenol, propylene glycol	1.0
Preservative	1.0
Hydrolyzed protein (and) hyaluronic acid	0.5
Sodium hydroxide	0.2
USP Purified Water	90

5 The above ingredients were added and processed as described above for the
10 acne composition. The composition displayed a flowable creamy lotion appearance
with excellent emolliency, spreadability and absorption characteristics at room
temperature. After heating the formulation to above 26°C, the composition thickened
to a gel-like consistency. The addition of adjuvants to the composition significantly
enhances the polymer network maximum viscosity.

15 Example 34. Sunscreen Lotion. An oil-free, lubricous sunscreen lotion was
made by combining the following ingredients utilizing conventional mixing techniques:

Table 11.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	2.0
Glycerin USP	8.0
Carbopol 980	1.0
Parsol MCX	7.0
Myristyl Ether Propionate	5.0
Preservative	1.0
Cyclomethicone	1.0
Sodium hydroxide	0.2
USP Purified Water	74

20 The above ingredients were added and processed as described above for the
25 acne composition. The composition displayed a flowable creamy lotion appearance

with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The addition of adjuvants to the composition significantly enhances the polymer network maximum viscosity.

- 5 **Example 35. Facial mask.** A face mask was made by combining the following ingredients utilizing conventional mixing techniques:

Table 12.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	1.0
Polyvinyl alcohol	6.0
Polyvinylpyrrolidone (20%)	5.0
D-panthenol, propylene glycol	1.25
Propylene glycol	1.25
USP Purified Water	85.5

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15

- The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The addition of adjuvants to the composition significantly enhances the polymer network maximum viscosity.

20

- 25 **Example 36. Facial toner.** A face mask was made by combining the following ingredients utilizing conventional mixing techniques:

Table 13.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	0.01
Hydroxyethyl cetyldimonium phosphate	1.00
PEG-40 hydrogenated castor oil	2.00

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Ingredient	% w/w
D-panthenol, propylene glycol	0.50
Glycerin	2.00
Witch hazel extract	5.00
USP Purified Water	88.49

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The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The addition of adjuvants to the composition significantly enhances the polymer network maximum viscosity.

Example 36. Solubilization studies of model hydrophobic agents in the poloxamer:poly(acrylic acid) polymer network: estradiol and progesterone. This example is presented to demonstrate the solubilization of a hydrophobic agent in the polymeric network. Progesterone and estradiol were used as the hydrophobic agents in this model solubilization study.

Acrylic acid (99%), fluorescein (98%), β -estradiol (98%), and progesterone (98%) were all obtained from Aldrich and used as received. Pluronic® F127 NF was obtained from BASF. Poly(oxyethylene-b-oxypropylene-b-oxyethylene)-g-poly(acrylic acid) copolymers (responsive polymer network) were synthesized by free-radical polymerization of acrylic acid in the presence of poloxamer as described above. The polymer network copolymers discussed here were composed of about 1:1 ratio of PAA to poloxamer. The rheological properties of polymer network were assessed using LVDV-II+ and RVDV-II+ Brookfield viscometers. The microscopic light scattering of 21 nm poly(styrene) latex particles in deionized water and 1 wt% reversibly gelling polymer network was measured using He-Ne laser as described previously (see Matsuo, E.S., Orkisz, M., Sun, S.-T., Li, Y., Tanaka, T., Macromolecules, 1994, 27, 6791). The solubility of fluorescein and hormones in aqueous solutions was measured by the equilibrium of excess solubilize with the corresponding solution following

30

removal of undissolved species by centrifugation and filtration. Hydrophobic agents were assayed spectrophotometrically at 240 (progesterone) or 280 nm (estradiol), or by using 70/30 w/w H_2SO_4 /MeOH (Tsilifonis-Chafetz reagent). In vitro hormone release studies were conducted using thermostated, vertical Franz cells. Spunbonded polypropylene microfilters (micron retention, 15-20) were used as a membrane separating feed and receiver phases in Franz cells. The responsive polymer network, water, ethanol, and 20% PEG in water were observed to wet the membrane. The receiver solution consisted of 20 w% PEG in water (pH 7) and were stirred by magnetic bars. The feed phases composed of responsive polymer network were loaded with either estradiol or progesterone. Each hormone was dissolved in ethanol and the resulting solution was added into the responsive polymer network.

Equilibrium solubility vs. temperature plots for estradiol and progesterone (partition coefficient octanol/water (P) 7200 and 5888, respectively), in aqueous solutions of Pluronic® F127 polyol and responsive polymer network are presented in Figure 22. It can be seen that increasing temperature and concentration (C) of polymers in the solution raises the amount of the hormone dissolved. In Figure 22a, vertical lines represent critical micellar temperatures (CMT) for corresponding Pluronic® F127 polyol solutions. It is interesting to note that the slope of the solubility-temperature plots increased as temperature reached CMT, indicating that solubilization in the Pluronic® solutions was predominantly due to the formation of micelles. Similar trend was observed in the responsive polymer network solutions. The S values in 5% aqueous solutions of branched PAA did not exceed 15 and 40 $\mu\text{g/mL}$ at 60°C for estradiol and progesterone, respectively. The solubility values found for responsive polymer network were the same as S in parent Pluronic® solutions of equivalent concentrations. Therefore, it may be suggested that solubilization behaviors of the responsive polymer network are governed by the properties of the poloxamer incorporated into it. Thermodynamic parameters of the solubilization process with responsive polymer network were calculated using the same approximations as in the micellar solubilization with Pluronic® polyols. See, Saito, Y., Kondo, Y., Abe, M., Sato, T., Chem. Pharm. Bull., 1994, 42, 1348. Namely,

partition coefficient P was estimated from equilibrium solubilities of estradiol in responsive polymer network and water:

$$P = S_{SH}/S_w \quad (13)$$

by extrapolating the solubility plots of the steroid in Figure 22 to 100% responsive polymer network. Using P values obtained from data in Figure 23, we calculated the standard free energy change (ΔG), standard enthalpy of solubilization (ΔH), and standard entropy of solubilization (ΔS) using the following expressions:

$$\Delta G = -RT \ln P; \Delta H = -R \Delta \ln P / \Delta(1/T); \Delta S = (\Delta H - \Delta G)/T \quad (14)$$

Thermodynamic parameters obtained along with P values are given in Table 14.

Apparent partition coefficients and thermodynamic parameters for solubilization of estradiol by responsive polymer network.

Table 14.

T, K	$P = S_{SH}/S_w$	ΔG kJ/mol	ΔH kJ/mol	ΔS J/mol
277	490	-14.3	4.72	68.6
293	520	-15.2		52.0
310	660	-16.7		53.9
323	660	-17.4		54.0
333	660	-18.0		54.0

Negative ΔG values indicate spontaneous solubilization at all temperatures, whereas positive ΔH shows that the solubilization was endothermic, similar to the solubilization of estradiol, as well as indomethacin, by the poloxamer. Notably, ΔS of solubilization was always positive, suggesting that the more ordered water molecules surrounding hydrophobic estradiol molecules moved to the less ordered bulk phase when the estradiol was transferred to the hydrophobic core of PPG segments in responsive polymer network. The aggregation of the PPG segments at elevated temperatures provides not only temporary cross-linking in the gel, but also a thermodynamically "friendly" environment for the hydrophobic drugs. Indeed, one can express the free energy of formation of the aggregate core-water interface in responsive

polymer network as:

$$\Delta G = [\sigma P_w(1-\phi) + \sigma W_D \phi](4\pi R^2/n) \quad (15)$$

where σP_w and σW_D are the interfacial tensions between pure PPO polymer and water and between water and the drug, respectively; ϕ is the volume fraction of the drug within the PPO core; R is the effective radius of the core; and n is the aggregation number.

Equation (3) shows that solubilization of a hydrophobic drug of high σW_D should increase the stability of the aggregate. The solubilization process was found to decrease the critical micellization concentration and substantially increase the micellar core radius in Pluronic surfactants (Hurter, P.N., et al., "In Solubilization in Surfactant Aggregates", Christian, S.D., Ed., Marcel Dekker, New York, 1995). A similar trend is indicated by the lowering the onset of gelation of the responsive polymer network upon solubilization of fluorescein (LogP 2.1) (Figure 24). The solubilization of hydrophobic drugs by responsive polymer network, analogous to the micellar solubilization of drugs by poloxamer, suggests that the responsive polymer network can be an effective vehicle in drug delivery.

Our in vitro study of hormone release from responsive polymer network shows an increase in the initial transport rate with either decreasing total polymer concentration in the formulation or decreasing temperature (Figure 25). These effects are related to the changes in macroscopic viscosity of the responsive polymer network, which erodes more rapidly from the feed phase through the membrane into the receiver compartment as the viscosity decreases (Figure 26). The degree of the responsive polymer network erosion was measured by weighing hormone-loaded responsive polymer network before and after kinetic experiment.

Figure 27 shows that the relative amount of progesterone penetrating into the receiver phase decreased 4-fold with the increase of total polymer concentration, whereas the total relative amount of progesterone stayed almost constant as total polymer concentration in the responsive polymer network increased. This result shows the existence of two routes of transport of hydrophobic drugs in our model system. Firstly, the drug incorporated into aggregates within the responsive polymer network

system can flow through the membrane along with the erosion of the responsive polymer network; secondly, the drug not associated with the responsive polymer network aggregates can diffuse out of the responsive polymer network in the feed phase. The second process should not be related to the viscosity of the responsive polymer network. Indeed, the dynamic light scattering experiment shows no dramatic change of diffusivity of poly(styrene) latex particles in the responsive polymer network as temperature rises thereby increasing macroscopic viscosity more than 10-fold (Figure 28). This result indicates that the viscosity of the responsive polymer network is essentially unaffected on the microscopic scale.

10

Appendix A attached.

APPENDIX A

FUNCTION DEFINITIONS

- Abrasive:** abrades, smoothes, polishes
- Absorbent powder:** takes up liquids, sponge-like action
- Absorption base:** forms water-in-oil emulsions
- Acidulent:** acidifies, lowers pH, neutralizes alkalis
- Amphoteric:** capable of reacting chemically either as an acid or a base; amphoteric surfactants are compatible with anionic and cationic surfactants
- Analgesic:** relieves pain
- Antacid:** neutralizes stomach acidity
- Antibacterial:** destroys/inhibits the growth/reproduction of bacteria
- Anti-caking:** prevents or retards caking of powders; keeps powders free-flowing
- Anti-dandruff:** retards or eliminates dandruff
- Antifoam:** suppresses foam during mixing
- Anti-inflammatory:** reduces, suppresses, counteracts inflammation
- Anti-irritant:** reduces, suppresses or prevents irritation
- Antimicrobial:** destroys, inhibits or suppresses the growth of microorganisms
- Antioxidant:** inhibits oxidation and rancidity
- Antiperspirant:** reduces or inhibits perspiration
- Antipruritic:** reduces or prevents itching
- Antiseptic:** inhibits the growth of microorganisms on the skin or on living tissue
- Antistat:** reduces static by neutralizing electrical charge on a surface
- Astringent:** contracts organic tissue after application
- Binder:** promotes cohesion of powders
- Bleaching agent:** lightens color, oxidizing agent
- Botanical:** natural plant derivative
- Buffer:** helps maintain original pH (acidity or basicity) of a preparation
- Carrier:** a vehicle or base used for a preparation
- Chelate:** form a complex with trace-metal impurities, usually calcium or iron
- Colorant:** adds color, may be a soluble dye or an insoluble pigment
- Conditioner:** improves condition of skin and hair
- Coupling agent:** aids in solubilization or emulsification of incompatible components
- Decolorant:** removes color by adsorption, bleaching or oxidation
- Denaturant:** used to denature ethyl alcohol
- Dental powder:** powdered dentifrice
- Deodorant:** destroys, masks, or inhibits formation of unpleasant odors
- Depilatory:** removes hair chemically
- Detergent:** a surface-active agent (surfactant) that cleans by emulsifying oils and suspends particulate soil
- Disinfectant:** destroys pathogenic microorganisms
- Dispersant:** promotes the formation and stabilization of a dispersion or suspension
- Dye stabilizer:** see Stabilizer
- Emollient:** softens, smoothes skin
- Emulsifier:** a surface-active agent (surfactant) that promotes the formation of water-in-oil or oil-in-water emulsions
- Enzymes:** complex proteins produced by living cells that catalyze biochemical reactions at body temperature.
- Fiber:** strands of natural or synthetic polymers; for instance, cotton, wool, silk, nylon, polyester
- Film former:** solution of a polymer that forms films when the solvent evaporates after application to a surface

- Fixative:** fixes or sets perfumes; retards evaporation; promotes longer lasting aroma
- Flavor:** imparts a characteristic taste (and aroma) to edible foods and drinks; sometimes used in lip products
- Foam booster:** enhances quality and quantity of lather of shampoos
- Foamer:** a surface-active agent (surfactant) that produces foam; an emulsion of air-in-water
- Foam stabilizer:** see Foam booster
- Fungicide:** inhibits or destroys growth of fungi
- Gellant:** a gelling agent; forms gels; includes a wide variety of materials such as polymers, clays and soaps
- Glosser:** furnishes a surface luster or brightness; usually used in lip or hair products
- Hair colorant:** see Colorant
- Hair conditioner:** see Conditioner
- Hair dye:** imparts a new permanent or semi-permanent color to hair
- Hair-set polymer:** polymer and/or resins used to maintain desired hair shape
- Hair-set resin:** see Hair-set polymer
- Hair waving:** see Reducing agent and Neutralizer
- Humectant:** absorbs, holds, and retains moisture
- Hydrotrope:** enhances water solubility
- Intermediate:** basic chemicals which are chemically modified to obtain the desired function
- Lathering agent:** a surface active agent (surfactant) that forms a foam or lather on mixing with air in solution; see also Foamer
- Lubricant:** reduces friction, smoothes, adds slip
- Moisture barrier:** retards passage of moisture or water
- Moisturizer:** aids in increasing the moisture content of the skin through humectant or barrier action
- Neutralizer:** an oxidizing agent used in hair waving that stops the action of the reducing agent and re-establishes the disulfide linkages in hair
- Oil absorbent:** see Absorbent powder
- Ointment base:** an anhydrous mixture of oleaginous components used as a vehicle for medicaments
- Opacifier:** opacifies clear liquids or solids
- Oxidant:** oxidizing agent, neutralizes reducing agents, bleaching agent
- Pearlant:** imparts a pearly texture and luster
- Perfume solvent:** see Solvent and Solubilizer
- Peroxide stabilizer:** see Stabilizer
- Pigment:** a finely powdered insoluble substance used to impart color, luster, or opacity
- Plasticizer:** plasticizes (makes more flexible) polymeric films or fibers
- Polish:** smoothes; adds gloss and luster
- Polymer:** a very high molecular weight compound consisting of repeating structural units
- Powder:** a solid in the form of fine particles
- Preservative:** protects products from spoilage by microorganisms
- Propellant:** pressurized gas in a container used to expel the contents when pressure is released by opening a valve
- Protein:** naturally occurring complex combinations of amino acids
- Reducing agent:** reduces a chemical compound usually by donating electrons; neutralizes oxidizing agents
- Refatting agent:** adds oils materials to the surface of substrates, e.g., skin and hair
- Resin:** nonvolatile solid or semisolid organic substances obtained from plants as exudates to prepared by polymerization of simple molecules
- Sequestrant:** forms coordination complexes with multivalent positive ions
- Silicone:** polymeric organic silicon compounds which are water-resistant

- Skin protectant:** protects the skin from environmental
- Solubilizer:** solubilizes, usually into aqueous vehicles, normally insoluble materials, such as fragrances, flavors, oils, etc.
- Solvent:** usually liquids capable of dissolving other substances
- Stabilizer:** added to stabilize emulsions and/or suspensions
- Stimulant:** produces a temporary increase in the functional activity of an organism or any of its parts
- Surfactant (surface active agent):** lowers surface tension between two or more incompatible phases; soaps, detergents, wetting agents, solubilizing agents and emulsifying agents are typical surfactants; surfactants are classified as anionic, cationic, nonionic and amphoteric; anionic surfactants are negatively charged, cationic surfactants have no electrical charge
- Suspending agent:** keeps finely divided solid particles in suspension
- Sweetener:** sweetens to provide a more pleasant taste
- Tanning accelerator:** accelerates the tanning of skin
- Thickener:** thickens or increases viscosity/consistency
- Thixotrope:** the property of certain gels and emulsions of becoming more fluid or less viscous when shaken or stirred
- UV absorber:** used as a sunscreen and to protect preparations from degradation by UV radiation
- UVA absorber:** absorbs in the range 320-400 nanometers (nm)
- UVB absorber:** absorbs in the range 290-320 nanometers (nm)
- Wax:** any of numerous substances of plant, animal or synthetic origin that contain principally esters of higher fatty acids and higher fatty alcohols; free fatty alcohols, fatty acids and hydrocarbons may also be present; waxes derived from petroleum
- products are mainly high-molecular-weight hydrocarbons
- Wetting agent:** a surface-active agent (surfactant) that lowers the surface and interfacial tension, facilitating the wetting of surfaces

FUNCTIONS

- | | | | |
|----|--|--|---|
| | <u>Abrasive</u> | | <u>AHA</u> |
| | Adzuki beans | | Apple (Pyrus malus) extract |
| 5 | Almond (Prunus amygdalus) meal, shell granules | | Apricot (Prunus armeniaca) kernel powder |
| | Aluminum silicate | | Citric acid |
| | Apricot (Prunus armeniaca) kernel powder, shells | | Ethyl lactate |
| | Hydrated silica | | Glycolic acid |
| 10 | Jajoba (Buxux chinensis) seed powder | | Lactic acid |
| | Luffa cylindrica | | Malic acid |
| | Olive stone granules | | Sodium lactate |
| | Oyster shell powder | | Tartaric acid |
| | Peach (Prunus persica) pit powder | | |
| | Peach (Prunus persica) stone granules | | <u>Antiacne</u> |
| 15 | Polyethylene | | Clays (white, yellow, red, green, pink) |
| | Polyethylene HEC granules | | Perfluorodecalin |
| | Polyethylene oxidized, P. spheres | | Salicylic acid |
| | Polystyrene | | Sulfur |
| | Pumice | | |
| 20 | Rice (Oryza sativa) bran | | <u>Anti-aging</u> |
| | Silica and S. colloidal | | Basil (Ocimum basilicum) extract |
| | Sodium chloride | | Carrot (Daucus carota) extract |
| | Walnut (Juglans regia) shell powder | | Catalpa kaempfera extract |
| | | | Ceramide 33 (liquid soy extract) |
| 25 | <u>Absorption base</u> | | Crataegus cuneata extract |
| | 1,2,6-Hexanetriol | | Eugenia jambolana extract |
| | Kaolin | | Fomes fometarius extract |
| | Petrolatum | | Fomistopsis pinicola extract |
| | Rice (Oryza sativa) starch | | Ganoderma lucidum oil |
| 30 | Soy (Glycine soja) sterol | | Ginseng (Panax ginseng) extract |
| | Zeolite | | Hyaluronic acid |
| | | | Hydrolyzed serum protein |
| | <u>Absorbent powder</u> | | Hydrolyzed soy flour |
| | Corn (Zea mays) starch | | Isachne pulchella extract |
| 35 | Maltodextrin | | Lactoferrin |
| | Nylon-12 | | Lady's Thistle (Silybum marianum) extract |
| | Oat (Avena sativa) bran, flour, meal | | Ligusticum jeholense extract |
| | Zeolite | | Marine collagen |
| | | | Mushroom (Coriolus versicolor) extract |
| 40 | <u>Acidulent</u> | | Must rose (Rosa moschata) oil |
| | Acetic acid | | Perfluorodecalin |
| | Citric acid | | Quaternium-51 |
| | Fumaric acid | | Rubus thunbergii extract |
| | Glutamic acid | | Serum protein |
| 45 | Glycolic acid | | Stenocalyx micalii extract |
| | Hydrochloric acid | | Tricholoma matsutake extract |
| | Lactic acid | | |
| | Nitric acid | | <u>Antibacterial</u> |
| | Phosphoric acid | | Ammonium iodide |
| 50 | Sodium bisulfate | | Chlorhexidine |
| | Sulfuric acid | | Chlorhexidine diacetate, C. digluconate |
| | Tartaric acid | | Chlorhexidine dihydrochloride |

- Chlorphenesin
Hexamidine diisethionate
Hexétidine
Iceland moss (*Cetraria islandica*) extract
Lactoterrin
5 Lauralkonium bromide, L. chloride
Laurtrimonium chloride
Laurylpyridinium chloride
Mauritiella armata extract
10 Mushroom (*Cordyceps scabifera*) extract
Orange blossom extract
Orange (*Citrus aurantium dulcis*) peel extract
PEG-42 Ebriko ceramides extract
Peppermint (*Mentha piperita*) extract
15 Philodendron (*Philodendron amurense*) extract
Pine (*Pinus sylvestris*) needle extract
Polymethoxy bicyclic oxazolidine
Quaternium 73
Rhus thunbergii extract
20 Tea tree (*Melaleuca alternifolia*) oil
Triclocarban
Undecylenic acid
- Anticaking**
25 Aluminum starch octenylsuccinate
Calcium stearate
Distarch phosphate
Hydrated silica
Kaolin
30 Magnesium myristate, M. silicate
Polyethylene, micronized
Silica silylate
Sodium aluminum silicate
Zinc stearate
- Anticaries agent**
Cetylamine hydrofluoride
Olaflur
Sodium fluoride
40 Stearyl trihydroxyethyl propylenediamine
dihydrofluoride
- Anticellulite**
Aminophylline
45 Bladderwrack (*Fucus vesiculosus*) extract
Butcherbroom (*Ruscus aculeatus*) extract
Carcinia cambogia extract
Fomes fomentarius extract
Fomistopsis pinicola extract
50 Ivy extract
Mushroom (*Coriolus versicolor*) extract
TEA-hydroiodide
Tricholoma matsutake extract
- Antidandruff**
Burdock (*Arctium lappa*) extract
Chloroxylenol
Corydalis ambigua extract
Disodium undecylenamido MEA-sulfosuccinate
Ginger root extract
Inga edulis extract
Mauritiella armata extract
Myristalkonium saccharinate
- PEG-6 undecylenate
Piroctone olamine
Resorcinol
Rosemary (*Rosmarinus officinalis*) extract
Sodium shale oil sulfonate
Stenocalyx micalii extract
Undecylenamide DEA
Willow (*Salix alba*) bark extract
Zinc pyrithione
- Antifungal**
Black walnut (*Juglans nigra*) extract
Coneflower (*Echinacea angustifolia*) extract
Orange blossom extract
Paffia paniculata extract
- Anti-inflammatory**
Allantoin polygalacturonic acid
Bisabolol
Black poplar (*Populus nigra*) extract
Brassica rapa-depressa extract
Butcherbroom (*Ruscus aculeatus*) extract
Calendula officinalis extract
Catalpa kaempferia extract
Celastrus paniculata extract
Ceramide 33 (liquid soy extract)
Chaparral (*Larrea mexicana*) extract
Coneflower (*Echinacea angustifolia*) extract
Cornflower (*Centauria cyanus*) extract
Dipotassium glycyrrhizinate
Euphorium fortunei extract
Duphrasia officinalis extract
Ficus racemosa extract
Golden seal (*Hydrastis canadensis*) root extract
Guaiazulene
Horse chestnut (*Aesculus hippocastanum*) extract
Jujube (*Zizyphus jujuba*) extract
Laminaria japonica extract
Licorice (*glycyrrhiza glabra*) extract
Ligusticum jeholense, L. lucidum extract
Matricaria (*Chamomilla recutita*) extract
Melaleuca uncinata extract
Melia azadirachta extract

- Mulberry (*Morus nigra*) extract
 Niacinamide ascorbate
 Orange (*Citrus aurantium dulcis*) peel extract
 Orange blossom extract
 5 Palmetto extract
 Palmitoyl collagen amino acids
 Passion flower (*Passiflora laurifolia*) fruit extract
 Paulownia *imperialis* extract
 Alicylic acid
 10 Shea butter (*Butyrospermum parkii*)
 Sodium carboxymethyl beta-glucan
 soy (*Glycine soja*) protein
 Stearyl glycerethinate
 Stenocalyx *micallii* extract
 15 Tocopheryl acetate, T. nicotinate
 Trichomonas *japonica* extract
 Willow (*Salix alba*) extract
 Witch hazel (*Hamamelis virginiana*) extract
 withania *somniferum* extract
 20 Yarrow (*Achillea millefolium*) extract
 Zinc lactate

Anti-irritant
 Acetyl monoethanolamine
 25 Allantoin
 Allantoin acetyl methionine, A. glycyrrhetinic
 acid
 Azelamide MEA
 Betaine
 30 Calendula *officinalis* extract
 Cocamidopropyl betaine
 Coceth-7 carboxylic acid
 Cornflower (*Centaurea cyanus*) extract
 Diisostearyl dimer diinoleate
 35 Dipalmitoyl cystine
 Green tea extract
 Hydrolyzed sweet almond protein
 Hydroxypropyltrimonium glectin
 Lauroyl collagen amino acids
 40 L-Lysine lauroyl methionine
 Mallow extract
 Matricaria (*Chamomilla recutita*) extract
 Palmitoyl hydrolyzed milk protein
 Palmitoyl hydrolyzed wheat protein
 45 Palmitoyl keratin amino acids
 PEG-12 palm kernel glycerides
 PEG-28 glyceryl tallowate
 PEG-30 glyceryl monococaoate
 PEG-60 almond glycerides
 50 PEG-78 glyceryl cocaoate
 PEG-82 glyceryl tallowate
 PEG-200 glyceryl tallowate
 Propionyl collagen amino acids
- PVP
 Saccharomyces lysate extract
 Sodium C12-15 parath-15 sulfonate
 Sodium lauroamphoacetate
 Soy (*Glycine soja*) protein
 Undecylenoyl collagen amino acids
 Valerian (*Valeriana officinalis*) extract

Antimicrobial
 Benzalkonium chloride
 Benzoic acid
 Benzyl alcohol
 Bromochlorophene
 2-Bromo-2-nitropropane-1,3-diol
 Butylparaben
 Capryloyl collagen amino acids
 Capryloyl glycine, C. keratin amino acids
 Captan
 Cetethylidimonium bromide
 Cetyl pyridinium chloride
 Chlorothymol
 Chloroxyleneol
 Citron oil
 Copper PCA
 Dichlorobenzyl alcohol
 Dilauryldimonium chloride
 Domiphen bromide
 Ethylparaben
 Eucalyptus (*Eucalyptus globulus*) extract
 Fennel (*Foeniculum vulgare*) extract
 Garlic (*allium sativum*) extract
 Glyceryl caprylate, G. laurate
 Hexamine diisethionate
 Hinokitiol
 Honeysuckle (*Lonicera caprifolium*) extract
 Lichen (*Usnea barbata*) extract
 Myristalkonium chloride
 Pentylene glycol
 Phenethyl alcohol
 Phenol
 Phenoxyethanol
 Phenoxyisopropanol
 Phenyl mercuric acetate, P.m. benzoate, P.m.
 borate
 o-Phenylphenol
 Polymethoxy bicyclic oxazolidine
 Potassium sorbat
 Propylparaben
 Ricinoleamodopropyltrimonium ethosulfate
 Sage (*Salvia officinalis*) extract
 Sodium benzoate, S. pyrrithione
 Sodium ricinoleate, S. shale oil sulfonate
 Thimerosal

- Thyme (*Thymus vulgaris*) extract
Thymol
Triclocarban
Triclosan
5 Undecylenamidopropyltrimonium methosulfate
Undecylenic acid
Zinc oxide, Z. PCA
Zinc pyrithione, Z. undecylenate
- 10 **Antioxidant**
Ascorbic acid
A. polypeptide
Ascorbyl oleate, A. palmitate
Beta-carotene
- 15 BHA
BHT
t-Butyl hydroquinone
Dilauryl thioldipropionate
Dimyristyl thioldipropionate
20 Disodium EDTA
Distearyl thioldipropionate
Dodecyl gallate
EDTA
Erythorbic acid
25 Ferulic acid
Grape (*Vitis vinifera*) seed extract
Green tea extract
HEDTA
Hydroquinone
30 Hydroquinone-beta-D-glucopyranoside
p-Hydroxyanisole
Lactoferrin
Lysine PCA
Melanin
35 Methyl gallate
Niacinamide ascorbate
Nordihydroguaiaretic acid
Oat (*Avena sativa*) extract
Oryzanol
40 Pentasodium pentetate
Pentetic acid
Propyl gallate
Retinyl palmitate polypeptide
Rosemary (*Rosmarinus officinalis*) extract
45 Saccharomyces lysate extract
Sage (*Salvia officinalis*) extract
Sodium ascorbate, S. erythorbate
Sodium metabisulfite
Sodium selenate, S. sulfite
50 Superoxide dismutase,
Tea (*Camellia sinensis*) extract
Tetrasodium EDTA
Tocopherol
- Tocopheryl acetate, T. linoleate
Wild marjoram (*Origanum vulgare*) extract
Yeast (*Saccharomyces cerevisiae*) extract (Faex)
- Antiperspirant**
Allantoin-aluminum chlorhydrate
Aluminum capryloyl hydrolyzed collage
Aluminum chlorhydrox-gly, A. chloride
Aluminum chlorohydrate, A. chlorohydrate
Aluminum PCA, A. sesquichlorohydrate
Aluminum undecylenoyl collagen amino acids
Aluminum zirconium pentachlorohydrate
Aluminum zirconium tetrachlorohydrate
Aluminum zirconium tetrachlorohydrate GLY
Aluminum zirconium trichlorohydrate
Aluminum-zirconium-glycine powder
Sage (*Salvia officinalis*) extract
Tormentil (*Potentilla erecta*) extract
Zirconium chlorohydrate
- Antiseptic**
Aluminum PCA
Azadirachta indica extract
2-Bromo-2-nitropropane-1,3-diol
Calendula amurensis extract
p-Chloro-m-cresol
Clove (*Eugenia caryophyllus*) oil
Crataegus cuneata extract
Dichlorobenzyl alcohol
Entada phaseoloides extract
Eucalyptus (*Eucalyptus globulus*) extract
Golden seal (*Hydrastis canadensis*) root extract
Hexachlorophene
Melia australasica, M. azadirachta extract
Methyl salicylate
Orange (*Citrus aurantium dulcis*) peel extract
Oxyquinoline sulfate
Pfaffia paniculata extract
Potassium abietoyl hydrolyzed collagen
PVP-iodine
Silver nitrate
Sodium salicylate
Sterculia platanifolia extract
Tea tree (*Melaleuca alternifolia*) oil
Tormentil (*Potentilla erecta*) extract
Xanthoxylum bungeanum extract
- Antistat**
Acetamide MEA
Acetamidopropyl trimonium chloride
6-(N-Acetylamino)-4-oxyhexyltrimonium
chloride
Alkyl dimethyl betaine

- Babassuamidopropalkonium chloride
- Behenamidopropyl ethyldimonium ethosulfate
- Behérfamidopropyl hydroxyethyl dimonium chloride
- 5 Carboxymethyl chitin
- Cetethyl morpholinium ethosulfate
- Cetrimonium chloride
- Chitin
- Chitosan
- 10 Cocamidopropyl ethyldimonium ethosulfate
- Cocodimonium hydroxypropyl hydrolyzed rice protein
- Cocodimonium hydroxypropyl hydrolyzed soy protein
- 15 Dimethicone hydroxypropyl trimonium chloride
- dimethyl behenamine, D. cocamine
- Dimethyl palmitamine, D. soyamine
- Dimethyl tallowamine
- Dioleylamidoethyl hydroxyethylmonium methosulfate
- 20 Dipalmitoylethyl hydroxyethylmonium methosulfate
- N-Dodecyl-N,N-dimethyl-N-(dodecyl acetate) ammonium chloride
- 25 Erucamidopropyl hydroxysultaine
- Glycerol monopyroglutamate
- Hydrogenated tallowamine oxide
- Isosteare _____ propyl dimethylamine
- Lactamidopropyl trimonium chloride
- 30 Lauryldimonium hydroxypropyl hydrolyzed collagen
- Linoleamidopropyl dimethylamine dimer dilinoleate
- Olealkonium chloride
- 35 PEG-2 cocamine
- PEG-2 cocomonium chloride
- PEG-2 oleammonium chloride
- PEG-8 caprylic/capric glycerides
- PEG-10 cocamine
- 40 PEG-15 soyamine
- PPG-9 diethylmonium chloride
- PPG-25 diethylmonium chloride
- PPG-40 diethylmonium chloride
- Propylene glycol stearate
- 45 Quaternium-26, -27, -53, -62, -72
- Rapeseedamidopropyl benzyltrimonium chloride
- Rapeseedamidopropyl epoxypropyl dimonium chloride
- Silica, colloidal
- 50 Sorbitan caprylate
- N-Soya-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate
- Soyethyl morpholinium ethosulfate
- Soyethyldimonium ethosulfate
- Stearalkonium chloride
- Stearamidopropyl benzyl dimonium chloride
- Stearamidopropyl ethyldimonium ethosulfate
- Steatrimonium chloride
- N-Stearyl-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate
- Wheat germamidopropylethyldimonium ethosulfate
- Astringent**
- Aluminum citrate, A. lactate
- Astragalus sinicus extract
- Astrocaryum murumuru, A. tucuma extract
- Azadirachta indica extract
- Azelamide MEA
- Bearberry (Arctostaphylos uva-ursi) extract
- Birch (Betula alba) leaf extract
- Catalpa kaempfera extract
- Celastrus paniculata extract
- Coccinea indica extract
- Coffee (Coffea arabica) bean extract
- Euphrasia officinalis extract
- Euterpe precatoria extract
- Evening primrose (Oenothera biennis) extract
- Gentian (Gentiana lutea) extract
- Geranium maculatum extract
- Grape (Vitis vinifera) leaf extract
- Henna (Lawsonia inermis) extract
- Hierochloa odorata extract
- Honeysuckle (Lonicera caprifolium) extract
- Hops (Humulus lupulus) extract
- Horesetail extract
- Hypericum perforatum extract
- Ivy extract
- Juniperus communis extract
- Kadsura beteliloca extract
- Kola (Cola acuminata) extract
- Lady's mantle (Alchemilla vulgaris) extract
- Lemon (Citrus medica limonum) extract, peel extract
- Lemon bioflavonoids extract
- Lysimachia foenum-graecum extract
- Magnolia spp. extract
- Mauritia flexosa extract
- Maximiliana regia extract
- Melaleuca uncinata, M. wilsonii extract
- Melia australasica extract
- Nettle (Urtica dioica) extract
- Oak (Quercus) bark extract
- Ocimum basilicum, O. santum extract
- Palmetto extract
- Passion flower (Passiflora laurifolia) fruit extract

- 5 Plantain (*Plantago major*) extract
 Polygonum multiflorum extract
 Pterocarpus marsupianus extract
 Raspberry (*Rubus*) extract
 Sambucus nigra oil
 Sanguisorbae root extract
 Selinum spp. extract
 Shorea robusta extract
 Tannic acid
 10 Walnut (*Juglans regia*) leaf extract, oil
 Wheat (*Triticum vulgare*) protein
 White nettle (*Lamium album*) extract
 Witch hazel (*Hamamelis virginiana*) extract
 Xanthoxylum bungeanum extract
 15 Zinc lactate
 Ziziphus jujuba extract
- Binder**
- 20 Aluminum starch octenylsuccinate
 Boron nitride
 C20-40, C30-50, C40-60 alcohols
 Calcium stearate
 Cellulose gum
 Dihydroabietyl behenate
 25 Diisostearyl malate
 dioctyl sebacate
 Distarch phosphate
 ethylcellulose
 Gellan gum
 30 Hydrogenated jojoba oil
 Isocetyl alcohol, I. palmitate
 Isopropyl isostearate
 Isostearyl erucate, I. isostearate
 Isostearyl neopentanoate
 35 Maltodextrin
 Methylcellulose
 Microcrystalline cellulose
 Octyl palmitate
 Octyldodecyl myristate
 40 bis-Octyldodecyl stearyl dimer diinoleate
 Octyldodecyl stearyl stearate
 Oleyl oleate
 PEG-20, -75, -150, -240, -350
 Polydipentene
 45 Polyethylene; P. micronized
 PTFE
 PVP
 Sorbitol
 Synthetic wax
 50 Tapioca dextrin
 Tridecyl benenate, T. neopentanoate
 Tridecyl stearyl stearate
 Trisodium HEDTA
- Biol. polymer**
 Distarch phosphate
 Dog rose (*Rosa canina*) see extract
 Hydrogen peroxide
 Kojic acid
 Mulberry (*Morus nigra*) extract
 Sanguisorbae root extract
- Botanical**
- Acacia
 Acacia farnesiana extract
 Agrimony (*Agrimonia eupatoria*) extract
 Alder (*Alnus firma*) extract
 Alfalfa (*Medicago sativa*) extract
 Algae (*Ascophyllum nodosum*) extract
 Algae (*Lithothamnium calcareum*) extract
 Aloe barbadensis, A.b. extract
 Aloe capensis extract
 Alpine Veronica extract
 Althea officinalis extract
 Angelica archangelica extract
 Anise (*Pimpinella anisum*) extract
 Apple (*Pyrus malus*) extract
 Apricot (*Prunus armeniaca*) extract
 Arnica montana extract
 Artemisia capillaris extract
 Artichoke (*Cynara scolymus*) extract
 Asafetida (*Ferula assa foetida*) extract
 Asiasarum _____ extract
 Asparagus officinalis extract
 Astragalus sinicus extract
 Avena (*Geum rivale*) extract
 Avocado (*persea gratissima*) extract
 Balm mint (*Melissa officinalis*) extract, oil
 extract
 Vanana (*Musa sapientum*) extract
 Barley (*Hordeum vulgare*) extract
 Basil (*Ocimum basilicum*) extract
 Bearberry (*Arctostaphylos uva-ursi*) extract
 Bee pollen extract
 Beet (*Beta vulgaris*) extract
 Betaglukan
 Bilberry (*Vaccinium myrtillus*) extract
 Bioflavonoids
 Birch (*Betula alba*) bark extract, leaf extract
 Birch (*Betula platyphylla japonica*) extract
 Bitter orange (*Citrus aurantium amara*) extract,
 flower extract, peel extract
 Black cohosh (*Cimicifuga racemosa*) extract
 Black currant (*Ribes nigrum*) extract
 Black henna extract
 Black poplar (*Populus nigra*) extract
 Black walnut (*Juglans nigra*) extract

- Bladderwrack (*Fucus vesiculosus*) extract
 Borage (*Borago officinalis*) extract
 Buckthorn (*Frangula alnus*) extract
 Burdock (*Arctium lappa*) extract
 5 Burdock (*Arctium minus*) root extract
 Burnet extract
 Butcherbroom (*Ruscus aculeatus*) extract
 Cabbage rose (*Rosa centifolia*) extract
 10 Calamus (*Acorus calamus*) extract
 Calendula officinalis extract
 Caper (*Capparis spinosa*) extract
 Capsicum frutescens extract, C.f. oleoresin
 Caraway (*Carum carvi*) extract
 Carrageenan (*Chondrus crispus*)
 15 Carrot (*Daucus carota*) extract
 Carrot (*Daucus carota sativa*) oil
 Cassia auriculata extract
 Celandine (*Chelidonium majus*) extract
 Chamomile (*Anthemis nobilis*) extract, oil
 20 Chaparral (*Larrea mexicana*) extract
 Cherry (*Prunus speciosa*) leaf extract
 Cherry bark, C.b. extract
 Chestnut (*Castanea sativa*) extract
 Chinese hibiscus (*Hibiscus rosa-sinensis*) extract
 25 Chlorella vulgaris extract
 Cimicifuga foetida rhizome extract
 Cinchona succiruba extract
 Citroflavonoid, water soluble
 Citrus bioflavonoid complex
 30 Clary extract
 Clove (*Eugenia caryophyllus*) extract
 Clover (*Trifolium pratense*) extract
 _____ officinale rhizome extract, C.o.
 _____ water
 35 Coffee (*Coffea arabica*) bean extract
 _____ oatmeal
 _____ (Tussilago farfara) leaf extract
 _____ (Symphytum officinale) leaf extract
 _____ extract
 40 _____ (Echinacea angustifolia) extract
 _____ officinalis
 _____ olistorius extract
 _____ (Coriandrum sativum) extract
 _____ (Zea mays) cob powder, silk extract
 45 _____ poppy (*Papaver rhoeas*) extract
 _____ (Centaurea cyanus) extract
 _____ (Agropyron repens) grass
 _____ monogina extract
 _____ maritimum extract
 50 Cucumber (*Cucumis sativus*) extract
 Cypress (*Cupressus sempervirens*) extract
 Dandelion (*Taraxacum officinale*) extract
 Date (*Phoenix dactylifera*) extract
 Dead Sea Mud, Salts
 Dog rose (*Rosa canina*) hips extract
 Dyer's broom extract
 Eleuthero ginseng (*Acanthopanax senticosus*)
 extract
 Elm (*Ulmus campestris*) extract
 Eucalyptus (*Eucalyptus globulus*) extract
 Eucalyptus globulus oil
 Eucommia ulmoides extract
 Euphrasia officinalis extract
 Evening primrose (*Oenothera biennis*) extract, oil
 Everlasting (*Helichrysum arenarium*) extract
 Fennel (*Foeniculum vulgare*) extract
 Fenugreek extract
 Fermented rice (*Oryza sativa*) extract
 Fern (*Dryopteris filix-Mas*) extract
 Fig (*Ficus carica*) extract
 Fir needle extract
 Fumitory (*Fumaria officinalis*) extract
 Gardenia florida extract
 Garlic (*Allium sativum*) extract
 Gelidium cartilagineum
 Gentian (*Gentiana lutea*) extract
 Geranium maculatum extract
 Ginger root extract
 Ginkgo biloba extract
 Ginseng (*Panax ginseng*) extract
 Glycyrrhetic acid
 Glycyrrhizic acid
 Glycyrrhizin ammoniated
 Golden seal (*Hydrastis canadensis*) root extract
 Goldthread (*Coptis japonica*) extract
 Gotu kola extract
 Grape (*Vitis vinifera*) distillate, extract
 Grape (*Vitis vinifera*) leaf, seed extract
 Grape skin extract
 Grapefruit (*Citrus grandis*) peel extract
 Green bean (*Phaseolus lunatus*) extract
 Ground Ivy (*Glechoma hederacea*) extract
 Guarana (*Paullinia cupana*) extract
 Harpagophytum procumbens extract
 Hay flower extract
 Hazel (*Corylus avellana*) nut extract
 Henna (*Lawsonia inermis*) extract
 Hesperidin, H, methyl chalcone
 Hibiscus sabdariffa extract
 Hibiscus syriacus extract
 High beta-glucan barley flour
 Honeysuckle (*Lonicera caprifolium*) extract
 Honeysuckle (*Lonicera japonica*) leaf extract
 Hops (*Humulus lupulus*) extract
 Horse chestnut (*Aesculia hippocastanum*) extract
 Horseradish (*Cochlearia armoracia*) extract

- Horsetail extract
 Houttuynia cordata extract
 Hyacinth (Hyacinthus orientalis) extract
 Hydrocotyl (Centella asiatica) extract
 5 Hydrolyzed oat protein, soy flour
 Hypericum perforatum extract
 Hyssop (Hyssopus officinalis) extract
 Indian cress (Tropaeolum majus) extract
 Isodonis Japonicus extract
 10 Ivy extract
 Japanese angelica (Angelica acutiloba) extract, water
 Japanese hawthorn (Crataegus cuneata) extract
 Jasmine (Jasminum officinale) extract
 15 Job's tears (Coix lacryma-jobi) extract
 Jojoba (Buxus chinensis) seed powder
 Juniperus communis extract
 Kelp (Macrocystis pyrifera) extract
 Kiwi (Actinidia chinensis) fruit extract, seed oil
 20 Kola (Cola acuminata) extract
 Krameria triandra extract
 Lady's mantle (Alchemilla vulgaris) extract
 Lady's Thistle (Silybum marianum) extract
 Laurel (Laurus nobilis) extract
 25 Lavender (Lavandula angustifolia) extract, water
 Lemon (Citrus medica limonum) extract, juice extract, peel extract
 Lemon bioflavonoids extract
 Lemongrass (Cymbopogon schoenanthus) extract
 30 Leopard flower (Belamcanda chinensis) root extract
 Lettuce (Lactuca scariola sativa) extract
 Licorice (Glycyrrhiza glabra) extract
 Lilac (Syringa vulgaris) extract
 35 Linden (Tilia argentea) extract
 Linden (Tilia cordata) extract, water
 Loquat (Eriobotrya japonica) leaf extract
 Maidenhair fern extract
 magnolia kobus extract
 40 Mallow extract
 Mandragora officinarum extract
 Mannan
 Marigold
 Marine silts
 45 Matricaria (Chamomilla recutita) extract
 Meadowsweet (Spiraea ulmaria) extract
 Melon (Cucumis melo) extract
 MEA iodine
 Mistletoe (Viscum album) extract
 50 Mugwort (Artemisia princeps) extract, water
 Mulberry (Morus alba) root extract
 Mushroom extract
 Myrrh (Commiphora myrrha) extract
- Nasturtium extract
 Neroli extract
 nettle (Urtica dioica) extract
 Oak (Quercus) bark extract
 Oak root extract
 Oat (Avena sativa) bran, bran extract, flour, protein
 Oat flower
 Olive (Olea europaea) extract, leaf extract
 Onion (Allium cepa) extract
 Orange blossom extract
 Orange (Citrus aurantium dulcis) flower extract, peel extract
 Pansy (Viola tricolor) extract
 Papaya (Carica papaya) extract
 Parsley (Carum petroselinum) extract
 Passion flower (Passiflora laurifolia) fruit extract
 Passionflower (Passiflora incarnata) extract
 Pea (Pisum sativum) extract
 Peach (Prunus persica) extract, leaf extract
 Pelargonium capitatum extract
 Pellitory (Parietaria officinalis) extract
 Pennyroyal (Mentha pulegium) extract
 Peony (Paeonia alba) extract
 Peony (Paeonia obovata) root extract
 Peppermint (Mentha piperita) extract, oil
 Perilla ocymoides extract
 Periwinkle (Vinca minor) extract
 PEG-80 jojoba acid/alcohol
 PEG-120 jojoba acid/alcohol
 Puffball paniculata extract
 Pheledendron amurense extract
 Phospholipids
 pimento (Pimenta officinalis) extract
 Pine (Pinus sylvestris) cone, needle extract
 Pineapple (Ananas sativus) extract
 Plantain (Plantago major) extract
 Pollen extract
 Pongamol
 Poria Cocos extract
 Pueraria lobata extract
 Queen of the meadow extract
 Quillaja saponaria extract
 Quince (Pyrus cydonia) seed extract
 Quinoa (Chenopodium quinoa) extract
 Raspberry (Rubus) extract
 Rauwolfia (Serpentina) extract
 Red clover
 Rehmannia chinensis extract
 Restharrow (Ononis spinosa) extract
 Rhododendron chrysanthum extract
 Rhodophyceae extract
 Rhubarb (Rheum palmatum) extract

- Rice (*Oryza sativa*) bran extract
 Rice fatty acid
 Ro  e' (*Rosa multiflora*) extract
 Rosemary (*Rosmarinus officinalis*) extract
 5 Rubia tinctorum extract
 Safflower (*Carthamus tinctorius*) extract
 Sage (*Salvia officinalis*) extract, water
 Sambucus nigra berry extract, extract
 Sandalwood (*Santalum album*) extract
 10 Sanguinaria canadensis extract
 Saponaria officinalis extract
 Sasa veitchii extract
 Saxifraga sarmentosa extract
 Scabiosa arvensis extract
 15 Scutellaria baicatisensis root extract
 Silk extract
 Silver fir (*Abies pectinata*) extract
 Sisal (*Agave rigida*) extract
 Slippery elm extract
 20 Soapberry (*Sapindus mukorossi*) extract
 Sophora angustifolia extract
 Sophora flavescens root extract
 Sophora japonica extract
 Soybean (*Glycine soja*) extract
 25 Soy (*Glycine soja*) germ extract, protein, sterol
 Spearmint (*Mentha viridis*) extract, oil
 Spinach (*Spinacia oleracea*) extract
 Spiraea ulmaria extract
 30 Sunflower (*Helianthus annuus*) seed extract
 Sweet almond (*Prunus amygdalus dulcis*) extract
 Sweet cherry (*Prunus avium*) extract
 Sweet cicely (*Anthriscus cerefolium*) extract
 Sweet clover (*Melilotus officinalis*) extract
 Sweet violet (*Viola odorata*) extract
 35 Swertia chirata extract
 Tea (*Camellia sinensis*) extract
 Thyme (*Thymus vulgaris*) extract
 Tomato (*Solanum lycopersicum*) extract
 Tormentil (*Potentilla erecta*) extract
 40 Tuberosa (*Polygonum tuberosum*) extract
 Turmeric (*Curcuma longa*) extract
 Valerian (*Valeriana officinalis*) extract
 Walnut (*Juglans regia*) extract, leaf extract
 Water Lily (*Nymphaea alba*) root extract
 45 Watercress (*Nasturtium officinale*) extract
 Wheat (*Triticum vulgare*) extract, protein
 Wheat (*Triticum vulgare*) germ extract
 Wheat bran lipids
 50 White ginger (*Hedychium coronarium*) extract
 White nettle (*Lamium album*) extract
 Wild agrimony (*Potentilla anserina*) extract
 Wild cherry (*Prunus serotina*) bark extract
 Wild indigo (*Baptista tinctoria*)
- Wild marjoram (*Origanum vulgare*) extract
 Willow (*Salix alba*) bark extract, extract
 Willow (*Salix alba*) leaf extract
 Witch hazel (*Hamamelis virginiana*) extract
 Yarrow (*Achillea millefolium*) extract
 Yeast (*Saccharomyces cerevisiae*) extract (Faex)
 Yucca vera extract
 Zanthoxylum piperitum extract
 Zedoary (*Curcuma zedoaria*) oil
- Buffer**
 Ammonium carbonate, A. phosphate
 Calcium hydroxide, C. phosphate
 Citric acid
 Ethanolamine HCl
 Glycine
 Phosphoric acid
 Potassium phosphate
 Potassium sodium tartrate
 Sodium acetate, S. citrate
 Sodium lactate, S. phosphate
 Succinic acid
 Tromethamine
- Carrier**
 Acrylates copolymer, spherical powder
 Arginine
 Caprylic/capric triglyceride
 Caprylic/capric/lauric triglyceride
 Caprylic/capric/oleic triglyceride
 Cetareth-20
 Coconut (*Cocos nucifera*) oil
 Cyclodextrin
 Dipropylene glycol
 Glyceryl caprylate, G. caprylate/caprate
 Hydrated silica
 Liposomes
 magnesium silicate
 Methyl propanediol
 PEG-8/SMDI copolymer
 Potassium chloride
 PPG-12/SMDI Copolymer
 PPG-51/SMDI Copolymer
 Propylene carbonate, P. glycol
 Serum albumin
 Sodium carboxymethyl beta-glucan
 Sodium chloride
 sodium magnesium silicate
 Tapioca dextrin
- Chelators**
 beta-Alanine diacetic acid
 Calcium disodium EDTA

	Disodium EDTA, -copper	Xanthozylum bungeanum extract
	EDTA	
	HEDTA	Cleansing
	Malic acid	Birch (Betula alba) leaf extract
5	Monostearyl citrate	Lemongrass (Cymbopogon schoenanthus) extract
	Pentastodium pentetate	Oat (Avena sativa) bran extract
	Pentetic acid	Passion flower (Passiflora laurifolia) fruit extract
	Phytic acid	Witch hazel (Hamamelis virginiana) extract
	Potassium aspartate	Yarrow (Achillea millefolium) extract
10	Sodium aspartate	
	Sodium dihydroxyethylglycinate	Conditioner
	Sodium hexametaphosphate	Acetamide MEA
	Tetrahydroxypropyl ethylenediamine	6-(N-Acetylamino)-4-oxyhexyltrimonium
	Tetrasodium EDTA	chloride
15	Tripotassium EDTA	Acrylamidopropyltrimonium chloride/acrylamide
	Trisodium EDTA, HEDTA	copolymer
	Cell stimulant	Adipic acid/dimethylaminohydroxypropyl
	Aesculus chinensis extract	diethylene triamine copolymer
20	Artemisia apiacea extract	AMP-isostearyl hydrolyzed wheat protein
	Astrocaryum muru, A. tucuma extract	Apricot (Prunus armeniaca) kernel oil
	Bactris gasipaes extract	Behenalkonium chloride
	Borjoia sorbilis extract	Behenamidopropyl dihydroxypropyl dimonium
	Calendula amurensis extract	chloride
25	Chrysanthemum morifolium extract	Benhenamidopropyl ethyldimonium ethosulfate
	Coccinea indica extract	Benhenamidopropyl PG-dimonium chloride
	Comfrey (Symphytum officinale) leaf extract	Benhenamidopropyldimethylamine behenate
	Condurango extract	Behenamine oxide
	Dandelion (Taraxacum officinale) extract	Behenoyl PG-trimonium chloride
30	Echitea glauca extract	Behenyl betaine
	Equisetum arvense extract	Benzyltrimonium hydrolyzed collagen
	Eucalyptus (Eucalyptus globulus) extract	Canolamidopropyl betain
	Euphorium fortunei extract	Capramide DEA
	Euterpe precatoria extract	Caprylic/capric/lauric triglyceride
35	Ficus racemosa extract	Caprylyl pyrrolidone
	Glycoproteins	Cassia auriculata extract
	Hierochloe odorata extract	Cetamine oxide
	Horse chestnut (Aescula hippocastanum) extract	Cetearealkonium chloride
	Inga edulis extract	Chitosan PCA
40	Kadsura heteliloca extract	Citric acid
	Ligustrum lucidum extract	Cocamidopropyl dimethylamine, C.d. lactate,
	Lysimachia foenum-graecum extract	C.d. propionate
	Mauritia flexosa extract	Cocamidopropyl dimethylaminohydroxypropyl
	Maximilliana regia extract	hydrolyzed collagen
45	Melaleuca bracteata, M. symphyocarp extract	Cocamidopropyldimonium
	Nelumbium speciosum extract	hydroxypropylhydrolyzed collagen
	Ocimum basilicum extract, O. santum extract	Cocamidopropyl ethyldimonium ethosulfate
	Paulownia imperialis extract	Cocamidopropyl PG-dimonium chloride, C.P.c.
	Pfaffia spp. extract	phosphate
50	Pterocarpus marsupianus extract	Coco-morpholine oxide
	Rubus thunbergii extract	Coco/oleamidopropyl betaine
	Selinum spp. extract	Cocodimonium hydroxypropyl hydrolyzed hair
	Shorea robusta extract	keratin

	Cocodimonium hydroxypropyl hydrolyzed rice protein	Hydroxycetyl hydroxyethyl dimonium chloride
	Cocodimonium hydroxypropyl hydrolyzed silk	Hydroxyproline
	Cocodimonium hydroxypropyl hydrolyzed soy protein	Hydroxypropyl chitosan
5	Coconut alcohol	Hydroxypropyl guar hydroxypropyltrimonium chloride
	N-Cocoyl-(3-aminodipropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate	Hydroxypropyl-bis-isostearamidopropyltrimonium chloride
	Collagen phthalate	Hydroxypropyl bis-stearyltrimonium chloride
10	Dibehenyl/diarachidyl dimonium chloride	Hydroxypropyltrimonium gelatin
	Dibehenyltrimonium chloride	Hydroxypropyltrimonium hydrolyzed keratin
	Dicetyltrimonium chloride	H.h. silk
	Didecyltrimonium chloride	Hydroxypropyltrimonium hydrolyzed wheat protein
	Dihydroxyethyl cocamine oxide	Isopropyl hydroxybutyramide dimethicone copolyol
15	Dihydroxyethyl dihydroxypropyl stearamonium chloride	Isopropyl lanolate
	Dihydroxyethyl tallow glycinate	Isostearamidopropyl betaine, I. dimethylamine
	Dihydroxyethyl tallowamine oxide	Isostearamidopropyl dimethylamine gluconate
	Dilauryl acetyl dimonium chloride	Isostearamidopropyl dimethylamine glycolate
20	Dilinoleamidopropyl dimethylamine	Isostearamidopropyl dimethylamine lactate
	Dimethyl hydrogenated tallowamine	Isostearamidopropyl ethyldimonium ethosulfate
	Dimethyl lauramine, D.I. isostearate	Isostearamidopropyl laurylacetodimonium chloride
	Dimethyl myristamine, soyamine, stearamine	Isostearamidopropyl morpholine, I.m. lactate
	Dimethylamidopropylamine dimerate	Isostearamidopropyl morpholine oxide
25	Disodium hydrogenated cottonseed glyceride sulfosuccinate	Isostearamidopropyl PG-dimonium chloride
	Disodium laureth sulfosuccinate	Isostearaminopropylkationium chloride
	Disodium lauroamphodiacetate	Isostearyl hydrolyzed animal protein
	Distearyltrimonium chloride	Isostearylamidopropyl dihydroxypropyl dimonium chloride
30	Ethyl ester of hydrolyzed keratin	Lactoglobulin
	N-Ethylether-bis-1,4-(N-isostearylamidopropyl)-N,N-dimethyl ammonium chlo	Lauramidopropyl dimethylamine
	Glutamic acid	Lauramidopropyl PG-dimonium chloride, I.P.c. phosphate
35	Glyceryl collagenate	Lauramine oxide
	Glycine	Lauroampho PG-glycinate phosphate
	Guar hydroxypropyltrimonium chloride	Lauroyl hydrolyzed collagen, L.h. elastin
	Henna (Lawsonia inermis) extract	Lauroyl silk amino acids
	Hydrogenated tallowamine oxide	Lauryl methyl gluceth-10 hydroxypropyl-dimonium chloride
40	Hydrogenated tallowtrimonium chloride	Lauryl phosphate, L. pyrrolidone
	Hydrolyzed concanin protein	Lauryltrimonium hydroxypropyl hydrolyzed collagen, keratin, soy protein
	Hydrolyzed egg protein	Linoleamidopropyltrimonium dimethylamine
	Hydrolyzed extensin	Milk amino acids
	Hydrolyzed fibronectin	Milk protein (Lactis proteinum)
45	Hydrolyzed fish protein	Myristalkonium chloride
	Hydrolyzed keratin	Myristamidopropyl betaine, M. dimethylamine
	Hydrolyzed lactalbumin	Myrtrimonium bromide
	Hydrolyzed milk protein	Oat (Avena sativa) protein
	Hydrolyzed oats	Oleamide
50	Hydrolyzed reticulon	Oleamidopropyl betaine, O. dimethylamine
	Hydrolyzed soy protein	
	Hydrolyzed sweet almond protein	
	Hydrolyzed wheat protein/PVP copolymer	
	Hydrolyzed wheat protein polysiloxane polymer	

- Oleamidopropyl dimethylamine hydrolyzed collagen
 Oleamidopropylamine oxide
 Oleamine
 5 Oleamine oxide
 Oleoyl sarcosine
 Oleyl betaine
 Oleyl dimethylamidopropyl ethonium ethosulfate
 Palmitamidopropyl betaine
 10 Palmitamidopropyl dimethylamine
 Palmitamine, P. oxide
 Panthenyl hydroxypropyl steardimonium chloride
 PEG-2 milk solids
 PEG-2 oleammonium chloride
 15 PEG-3 lauramine oxide
 PEG-5 stearyl ammonium lactate
 PEG-15 cocomonium chloride
 PEG-15 cocopolyamine
 PEG-15 tallowmonium chloride
 20 PEG-27
 PEG-40
 PEG-85 lanolin
 PEG-7000
 Polydimethicone copolyol
 25 Polymethacrylamidopropyltrimonium chloride
 Polyoxyethylene dihydroxypropyl linoleaminium chloride
 Polyquaternium-2, -5, -6, -11, -16
 Polyquaternium-17, -18, -24, -29, -44
 30 Potassium dimethicone copolyol panthenyl phosphate
 Potassium lauroyl collagen amino acids
 Potassium lauroyl hydrolyzed soy protein
 Potassium lauroyl wheat amino acids
 35 Potassium stearyl hydrolyzed collagen
 PPG-5 lanolin alcohol ether
 PPG-9 diethylmonium chloride
 PPG-20 lanolin alcohol ether
 Proline
 40 Propylene glycol stearate
 PVP/dimethiconylacrylate/polycarbamyl/polyglycol ester
 PVP/dimethylaminoethylmethacrylate copolymer
 45 PVP/dimethylaminoethylmethacrylate/polycarbamyl/polyglycol ester
 PVP/hydrolyzed wheat protein copolymer
 Quaternium-22, -26, -33, -61, -62, -70, -80
 Quaternium-76 hydrolyzed collagen
 50 Rapeseedamidopropyl benzyltrimonium chloride
 Rapeseedamidopropyl epoxypromyl dimonium chloride
 Rapeseedamidopropyl ethyldimonium ethosulfate
 Rice peptide
 Ricinoleamidopropyl-dimonium ethosulfate
 Ricinoleamidopropyl betaine
 Ricinoleamidopropyl dimethylamine lactate
 Ricinoleamidopropyl ethyldimonium ethosulfate
 Ricinoleamidopropyltrimonium chloride
 Ricinoleamidopropyltrimonium ethosulfate
 Silicone quaternium-3, -4
 Silk amino acids
 Sodium/TEA-lauroyl collagen amino acids
 Sodium/TEA-lauroyl hydrolyzed keratin
 Sodium/TEA-lauroyl keratin amino acids
 Sodium citrate
 Sodium cocoyl hydrolyzed soy protein
 Sodium hydrogenated tallow dimethyl glycinate
 Sodium lauroyl collagen, keratin amino acids
 Sodium lauroyl wheat amino acids
 Sodium stearamphacetate
 Soluble keratin, wheat protein
 Soyamide DEA
 Soyamidopropyl benzyltrimonium chloride
 Soyamidopropyl betaine, S. dimethylamine
 Soyamidopropyl ethyldimonium ethosulfate
 Soyethyl morpholinium ethosulfate
 Soyethyltrimonium ethosulfate
 Stearamide MEA
 Stearamidoethyl diethylamine, ethanolamine
 Stearamidopropyl benzyl dimonium chloride
 Stearamidopropyl cetearyl dimonium tosylate
 Stearamidopropyl dimethylamine stearate
 Stearamidopropyl ethyldimonium ethosulfate
 Stearamidopropyl morpholine lactate
 Stearamidopropyl PG-dimonium chloride
 phosphate
 Stearaine oxide
 Steardimonium hydroxypropyl hydrolyzed collagen, keratin
 Steardimonium panthenol
 Stearoyl amidoethyl diethylamine
 Steartrimonium bromide
 Stearyl dimethicone
 Tallowamidopropyl dimethylamine
 Tetramethyl trihydroxy hexadecane
 TEA-cocoyl hydrolyzed collagen
 Trachea hydrolysate
 Tricetylmonium chloride
 Tridecyl salicylate
 Triethonium hydrolyzed collagen ethosulfate
 Wheat germamidopropalkonium chloride
 Wheat germamidopropyl dimethylamine lactate
 Wheat germamidopropyl ethyldimonium ethosulfate
 Wheat peptide

	Yeast powder, deproteinated	Ammonium laureth sulfate
		Ammonium lauryl sulfate
	<u>Coupling agent</u>	Capramide DEA
	Acetyl monoethanolamine	Cocamidopropyl dimethylamine lactate
5	Butyloctanol	Decyl glucoside
	Myreth-3	Decyltetradeceth-25
	Oleyl alcohol	DEA lauryl sulfate
	PPG-10 butanediol	Diamyl sodium sulfosuccinate
	PPG-10 cetyl ether	Dicyclohexyl sodium sulfosuccinate
10	PPG-10 oleyl ether	Diisobutyl sodium sulfosuccinate
	PPG-15 stearyl ether	Disodium caproamphodiacetate
	PPG-22 butyl ether	Disodium caproamphodipropionate
	PPG-23 oleyl ether	Disodium capryloamphodiacetate
	PPG-50 oleyl ether	Disodium capryloamphodipropionate
15	Trideceth-7 carboxylic acid	Disodium cetaryl sulfosuccinate
	<u>Denaturant</u>	Disodium cocamid MEA-sulfosuccinate
	Brucine sulfate	Disodium cocamid MIPA-sulfosuccinate
	Denatonium benzoate, saccharide	Disodium cocoamphodipropionate
20	Nicotine sulfate	Disodium deceth-6 sulfosuccinate
	Sucrose octaacetate	Disodium isodecyl sulfosuccinate
	Thymol	Disodium lauramide MEA-sulfosuccinate
	<u>Dental powder</u>	Disodium lauramide PEG-2 sulfosuccinate
25	Dicalcium phosphate	Disodium laureth sulfosuccinate
	Silica	Disodium lauroamphodiacetate
	Sodium monofluorophosphate	Disodium lauroamphodipropionate
	Stannous fluoride	Disodium lauryl sulfosuccinate
	<u>Deodorant</u>	Disodium myristamide MEA-sulfosuccinate
30	Abietic acid	Disodium nonoxynol-10 sulfosuccinate
	Azadirachta indica extract	Disodium oleamide PEG-2 sulfosuccinate
	Chlorophyllin-copper complex	Disodium PEG-4 cocoamide MIPA-sulfosuccinate
	Eugenia jambolana extract	Disodium ricinoleamide MEA-sulfosuccinate
35	Farnesol	Disodium tallowiminodipropionate
	Fermented vegetable	Dodecylbenzene sulfonic acid
	Mauritia flexosa extract	Dodecylbenzene sulfonic acid
	Salvia miltiorrhiza extract	Dodecylbenzene sulfonic acid
	Sodium aluminum chlorohydroxy lactate	Dodecylbenzene sulfonic acid
40	Spondias amara extract	Dodecylbenzene sulfonic acid
	Triethyl citrate	Dodecylbenzene sulfonic acid
	Zinc phenol sulfonate, Z. ricinoleate	Dodecylbenzene sulfonic acid
	<u>Depilatory</u>	Dodecylbenzene sulfonic acid
45	Barium sulfide	Dodecylbenzene sulfonic acid
	Beeswax, oxidized	Dodecylbenzene sulfonic acid
	Calcium thioglycolate	Dodecylbenzene sulfonic acid
	L-cysteine HCL	Dodecylbenzene sulfonic acid
	Potassium thioglycolate	Dodecylbenzene sulfonic acid
50	Sodium thioglycolate	Dodecylbenzene sulfonic acid
	Thioglycerin	Dodecylbenzene sulfonic acid
	<u>Detergent</u>	Dodecylbenzene sulfonic acid

- Oleoampholydihydroxypropyl sulfonate
 Oleth-12, -15
 Oleyl bétaine
 5 Palmiamidopropyl betaine
 PEG-10 glyceryl stearate
 PEG-15 glyceryl stearate
 PEG-25 glyceryl isostearate
 Potassium cocoyl hydrolyzed collagen
 Sodium caproamphoacetate
 10 Sodium cocoamphoacetate
 Sodium cocoamphopropionate
 Sodium cocomonoglyceride sulfate
 Sodium cocoyl hydrolyzed soy protein
 Sodium cocoyl isethionate
 15 Sodium C12-15 pareth-25 sulfate
 Sodium C14-16 olefin sulfonate
 Sodium C14-17 alkyl seculfonate
 Sodium deceth sulfate
 Sodium decyl diphenyl ether sulfonate
 20 Sodium dodecylbenzenesulfonate
 Sodium dodecylidiphenyl ether sulfonate
 Sodium iodate
 Sodium laureth-2 sulfate
 Sodium laureth-3 sulfate
 25 Sodium laureth-7 sulfate
 Sodium laureth-12 sulfate
 Sodium laureth-13-carboxylate
 Sodium laureth sulfate
 Sodium lauriminodipropionate
 30 Sodium lauroamphopropionate
 Sodium lauroyl methyl alaninate
 Sodium lauryl phosphate, S.I. sulfate
 Sodium lauryl sulfoacetate
 Sodium methyl oleoyl taurate
 35 Sodium methyl cocoyl taurate
 Sodium methyl lauroyl taurate
 Sodium methyl naphthalenesulfonate
 Sodium myreth sulfate
 Sodium myristyl sulfate
 40 Sodium octyl sulfate, oleyl sulfate
 Sodium POE alkyl ether acetate
 Sodium trideceth-7 carboxylate
 Sodium trideceth sulfate
 Sodium tridecyl sulfate
 45 Steareth-11, -30
 TEA-dodecylbenzenesulfonate
 TEA-laureth sulfate
 TEA-lauryl sulfate
 TEA-palm kernel sarcosinate
 50 TEA-PEG-3 cocamide sulfate
 Undecylenamidopropyl betaine

Disinfectant

Benzalkonium chloride
 Chlorophene
 Didecylidimonium chloride
 Myristalkonium saccharinate
 Shikonin
 Sodium capryloamphoacetate
 Tea tree (Melaleuca alternifolia) oil
 p-Tertiaryphenol

Dispersant
 Alkylated polyvinylpyrrolidone
 C20-40, C30-50, C40-60 alcohols
 Castor (Ricinus communis) oil
 Cetareth-20
 Cetyl PPG-2 isodeceth-7 carboxylate
 Cholesteryl/beheryl/octyldodecyl lauryl
 glutamate
 Decaglycerol monodiolate
 Diisocetyl dodecanedioate
 Diisostearyl adipate
 Dimethicone copolyol methyl ether
 Dioctyldodecyl dimer diinoleate
 Dioctyldodecyl dodecanedioate
 Ethyl hydroxymethyl oleyl oxazoline
 Glyceryl caprylate, G. caprylate/caprate
 Glyceryl diisostearate
 Hydrogenated castor oil, H. lecithin
 Hydrogenated tallow glycerides
 Isobutylene/MA copolymer
 Isocetyl alcohol
 Isopropyl C12-15-pareth-9-carboxylate
 Isostearyl neopentanoate
 Lanolin acid
 Laureth-4, -6, -16
 Melanin
 Nonoxynol-2, -18, -20, -30, -40
 Octoxynol-5, -10
 Octoxynol 16, 30, 40, 70
 Octyldodeceth-5
 Octyldodecyl/dimethicone copolyol citrate
 Oleth-40
 Oleyl alcohol
 PEG-5 castor oil, glyceryl sesquiolate
 PEG-6 beeswax
 PEG-8/SMDI copolymer
 PEG-9 castor oil, oleate, stearate
 PEG-10 dioleate, stearamine
 PEG-12 beeswax
 PEG-12 glyceryl dioleate, laurate
 PEG-15 castor oil
 PEG-20 almond glycerides
 PEG-20 glyceryl isostearate
 PEG-20 sorbitan triisostearate

- PEG-25 castor oil
 PEG-30 dipolyhydroxystearate
 PEG-40 hydrogenated castor oil PCA isostearate
 PEG-60 shea butter glycerides
 5 Poloxamer 101, 122, 181, 182, 184
 Polyglyceryl-2 sesquioside
 Polyglyceryl-3 diisostearate, oleate
 Polyglyceryl-5 distearate
 Polyglyceryl-6 mixed fatty acids
 10 Polyglyceryl-10 diisostearate, distearate
 Polyglyceryl-10 decaoleate
 Polyhydroxystearic acid
 Polysorbate 40, 80
 Potassium polyacrylate
 15 PPG-3 PEG-6 oleyl ether
 PPG-9 diethylmonium phosphate
 PPG-12/SMDI Copolymer
 PPG-15 stearyl ether
 PPG-25, PPG-40 diethylmonium chloride
 20 PPG-51/SMDI Copolymer
 PVP/eicosene copolymer
 PVP/hexadecene copolymer
 Rapeseed oil, ethoxylated high erucic acid
 Ricinoleyl alcohol
 25 Sodium ceteth-13-carboxylate
 Sodium lignosulfonate, S. polymethacrylate
 Sodium polynaphthalenesulfonate
 Sorbitan oleate
 Steareth-10
 30 Tricontanyl PVP
 Trisostearin PEG-6 esters
 Trioctyldodecyl citrate
- Emollient**
- 35 Acetylated glycol stearate
 Acetylated hydrogenated lanolin
 Acetylated hydrogenated lard glyceride
 Acetylated hydrogenated vegetable glyceride
 Acetylated lanolin, A.I. alcohol
 40 Acetylated lard glyceride
 Acetylated monoglycerides
 Acetylated palm kernel glycerides
 Aleurites moluccana ethyl ester
 Allantoin
 45 Aluminum/magnesium hydroxide stearate
 AMP-isostearyl hydrolyzed soy protein
 Apricot (Prunus armeniaca) kernel oil
 Arachidyl behenate
 Argania spinosa oil
 50 Avocado (Persea gratissima) oil, unsaponifiables
 Avocado oil ethyl ester
 Babassu (Orbignya oleifera) oil
 Batyl isostearate, B. stearate
- Behenamidopropyl dihydroxypropyl dimonium
 chloride
 Behenoxy dimethicone
 Behenyl alcohol, B. behenate
 Behenyl erucate, B. isostearate
 Benzyl laurate
 Bladderwrack (Fucus vesiculosus) extract
 Borage (Borago officinalis) seed oil
 Borageamidopropyl phosphatidyl PG-dimonium
 chloride
 Brain extract
 Brazil nut (Bertholletia excelsa) oil
 Butyl myristate, oleate, stearate
 Butyloctanol
 Butyloctyl oleate
 C12-13, C12-16, C14-15 alcohols
 C12-15 alcohols octanoate
 C12-15 alkyl benzoate
 dl-C12-15 alkyl fumarate
 C12-15 alkyl lactate
 Camellia kissi oil
 Tea (Camellia sinensis) oil
 C10-30 cholesterol/lanostearol esters
 Canola oil
 Caprylic/capric triglyceride
 Caprylic/capric triglyceride PEG-4 esters
 Caprylic/capric/lauric triglyceride
 Caprylic/capric/linoleic triglyceride
 Caprylic/capric/oleic triglycerides
 Caprylic/capric/stearic triglyceride
 Caprylic/capric/succinic triglyceride
 Capsicum frutescens oleoresin
 Carrot (Daucus carota sativa) oil
 Cashew (Anacardium occidentale) nut oil
 Castor (Ricinus communis) oil
 Cetearyl behenate, C. candelillate
 Cetearyl isononanoate, C. octanoate
 Cetearyl palmitate, C. stearate
 Ceteth-10
 Cetostearyl stearate
 Cetyl C12-15 parath-9 carboxylate
 Cetyl acetate, C. alcohol
 Cetyl esters, C. lactate
 Cetyl myristate, C. octanoate
 Cetyl oleate, C. palmitate
 Cetyl PPG-2 isodeceth-7 carboxylate
 Cetyl ricinoleate, C. stearate
 Cetyl stearyl octanoate
 Chia (Salvia hispanica) oil
 Cholesterol esters
 Cholesterol
 Cholesteryl/beheryl/octyldodecyl lauryl
 glutamate

	Cholesteryl hydroxystearate	Dimethiconol stearate
	Cholesteryl stearate	Dimethyl lauramine oleate
	Choleth-24	Diocetyl adipate
	C18-70 Isoparaffin	Diocetyl dimer dilinoleate
5	C10-18, C12-18 triglycerides	Diocetylcyclohexane
	C12-15 linear alcohols 2-ethylhexanoate	Diocetyldodecyl dimer dilinoleate
	Cocamidopropyl PG-dimonium chloride	Diocetyldodecyl dodecanedioate
	Cocoa (Theobroma cacao) butter	Diocetyl malate, D. sebacate, succinate
	Coco-caprylate/caprate	Dipentaerythritol fatty acid ester
10	Coco-rapeseedate	Dipentaerythrityl hexacaprylate/hexacaprate
	Coconut (Cocos nucifera) oil	Dipentaerythrityl hexahydroxystearate/isostearate
	Cocoyl hydrolyzed soy protein	Distearyldimethylamine dilinoleate
	Collagen hthalate	Diitridecyl adipate
	Colloidal oatmeal	Dog rose (Rosa canina) hips oil
15	Comfrey (Symphytum officinale) leaf extract	Egg (Ovum) yolk extract
	Corn (Zea mays) oil	Emu (Dromiceus) oil
	Corn poppy (Papaver rhoeas) extract	Erucyl erucate
	Cottonseed (Gossypium) oil	Ethyl avocadate
	Cuttlefish extract	Ethylhexyl isopalmitate
20	Cyclomethicone	2-Ethylhexyl isostearate
	Deceth-4 phosphate	Ethyl linoleate, E. minkate
	Decyl oleate	Ethyl morrhuate, E. myristate
	Decyltetradecanol	Ethyl oleate, E. olivate
	Dialkydimethylpolysiloxane	Evening primrose (Oenothera biennis) extract, oil
25	Dibutyl sebacate	Glycereth-4,5-lactate
	Dicapryl adipate	Glycereth-5 lactate
	Dicaprylyl ether, D. maleate	Glycereth-7 benzoate
	Diethylene glycol diisononanoate	Glycereth-7 diisononanoate
	Diethylene glycol dioctanoate	Glycereth-7 triacetate
30	bis-Diglyceryl/caprylate/caprate/isostearate/ hydroxystearate/adipate	Glycereth-7 trioctanoate
	bis-Diglyceryl/caprylate/caprate/isostearate/ stearate/hydroxystearate/adipate	Glycereth-12, -26
	Dihydroabletly behenate	Glycerol tricaprylate/caprate
35	Dihydroxyethyl tallowamine oleate	Glycerol adipate, G. dioleate
	Diisobutyl adipate	Glycerol isostearate, G. lanolate
	Diisocetyl adipate, dodecanedioate	Glycerol linoleate, G. monopyrrolutamate
	Diisodecyl adipate	Glycerol myristate, G. oleat
	Diisopropyl adipate, dimer dilinoleate	Glycerol ricinoleate
40	Diisopropyl sebacate	Glycerol triacetyl hydroxystearate
	Diisostearoyl trimethylolpropane siloxy silicate	Glycerol triacetyl ricinoleate
	Diisostearyl adipate	Glycosaminoglycans
	Diisostearyl dimer dilinoleate	Glycosophingolipids
	Diisostearyl fumarate, D. malate	Gold of Pleasure oil
45	Dilinoic acid	Grape (Vitis vinifera) seed oil
	Dimethicone	Hazel (Corylus avellana) nut oil
	Dimethicone copolyol	Helianthus annuus ethyl ester
	Dimethicone copolyol acetate, D.c. almondate	Hexadecyl isopalmitate
		Hexamethyldisiloxane
50	Dimethicone copolyol isostearate, D.c. lactate	hexyl laurate
	Dimethicone copolyol methyl ether	hexyldodecanol
	Dimethicone copolyol phthalate	Hexyldodecyl stearate
	Dimethicone propylethylenediamine behenate	honey extract
		Hybrid safflower (Carthamus tinctorius) oil
		Hybrid sunflow (Helianthus annuus) oil

- Hydrogenated C6-14 olefin polymers
Hydrogenated castor oil
Hydrogenated castor oil laurate
hydrogenated coconut oil
5 Hydrogenated cottonseed oil
Hydrogenated C12-18 triglycerides
Hydrogenated lanolin
Hydrogenated lanolin, distilled
Hydrogenated lecithin
10 Hydrogenated palm kernel glycerides
Hydrogenated palm oil
Hydrogenated polyisobutene
15 Hydrogenated soybean oil
Hydrogenated starch hydrolysate
Hydrogenated tallow glyceride
Hydrogenated tallow glyceride lactate
Hydrogenated turtle oil
20 Hydrogenated vegetable glycerides
Hydrogenated vegetable oil
Hydrolyzed collagen
Hydrolyzed conchiorin protein
Hydrolyzed keratin
25 Hydrolyzed mushroom (*Tricholoma matsutake*)
extract
Hydrolyzed oat protein
Hydroxylated lanolin
Hydroxylated milk glycerides
30 Hydroxystearic acid
butter
Isobutyl palmitate, I. stearate
Isocetyl behenate, I. octanoate
Isocetyl palmitate, I. salicylate
35 Isocetyl stearate
Isodeceth-2 cocoate
Isodecyl citrate, I. cocoate
Isodecyl isononanoate, I. laurate
Isodecyl neopentanoate
40 Isodecyl octanoate, I. oleate
Isodecyl stearate
Isododecane
Isocicosane
Isohexadecane
45 isononyl isononanoate
Isopentylidol
Isopropyl avocadate
Isopropyl C12-15-pareth-9-carboxylate
Isoproyl isostearate
50 Isopropyl lanolate, I. linoleate
Isopropyl myristate, I. palmitate
Isopropyl PPG-2-isodeceth-7 carboxylate
Isopropyl stearate
Isosorbide laurate
Isostearic acid
Isostearyl alcohol
Isostearyl behenate, I. benzoate
Isostearyl diglyceryl succinate
Isostearyl erucate, I. erucyl erucate
Isostearyl isostearate, I. lactate
Isostearyl malate, I. myristate
Isostearyl neopentanoate, palmitate
Isostearyl stearoyl stearate
Isostearylamidopropyl dihydroxypropyl
dimonium chloride
Isotridecyl isononanoate
Isotridecyl myristate
Jojoba (*Buxus chinensis*) oil
Jojoba butter, J. esters
Jojoba oil, synthetic
Kukui (*Aleurites moluccana*) nut oil
Lactamide DGA
Laneth-10 acetate
Lanolin, L. acid
Lanolin alcohol, L. oil
Lanolin, ultra anhydrous
Lanolin wax
Lanostearol
Lard glyceride
Laureth-2, -3
Laureth-2 acetate, L. benzoate
Laureth-2-octanoate
Lauric/palmitic/oleic triglyceride
Lauryl behenate, L. lactate
Lauryl phosphae
Lauryldimethylamine isostearate
Lesquereila fendleri oil
Linoleic acid
Macadamia ternifolia nut oil
Maleated soybean oil
Mango (*Magnifera indica*) oil, seed oil
Mango kernel oil
Meadowfoam (*Limnanthes alba*) seed oil
Menhaden (*Brevoortia tyrannus*) oil
Methyl acetyl ricinoleate
Methyl gluceth-20
Methyl gluceth-20 benzoate, M.g. distearate
Methyl hydroxystearate, M. ricinoleate
Microcrystalline wax
Mineral oil (*Paraffinum liquidum*)
Mink oil
Musk rose (*Rosa moschata*) oil
Myreth-3
Myreth-3 caprate, M. laurate
Myreth-3 myristate, M. octanoate
Myristyl alcohol, M. lactate

	Myristyl myristate, M. octanoate	PEG-9 stearyl stearate
	Myristyl propionate, M. stearate	PEG-10 stearyl stearate
	Neatsfoot oil	PEG-12
5	Neem (<i>Melia azadirachta</i>) seed oil	PEG-12 dioleate, P. palm kernel glycerides
	Neopentyl glycol dicaprate	PEG-15 cocamine oleate/phosphate
	Neopentyl glycol dicaprate/dicaprylate	PEG-18
	Neopentyl glycol diisooctanoate	PEG-20
	Neopentyl glycol dioctanoate	PEG-20 hydrogenated castor oil isostearate
10	Oat (<i>Avena sativa</i>) bran extract, extract, flour	PEG-20 hydrogenated castor oil trisostearate
	Octacosanyl stearate	PEG-20 hydrogenated lanolin
	Octyl cocoate	PEG-24 hydrogenated lanolin
	Octyl hydroxystearate, O. isononanoate	PEG-25 PABA, P. propylene glycol stearate
	Octyl neopentanoate, O. octanoate	PEG-40 glyceryl laurate
	Octyl oleate, O. palmitate	PEG-40 hydrogenated castor oil isostearate
15	Octyl pelargonate, O. stearate	PEG-40 hydrogenated castor oil laurate
	Octyldecanol	PEG-40 hydrogenated castor oil trisostearate
	Octyldodecanol	PEG-40 jojoba oil
	Octyldodecyl behenate, O. benzoate	PEG-50 hydrogenated castor oil laurate
	Octyldodecyl erucate, O. myristate	PEG-50 hydrogenated castor oil trisostearate
20	Octyldodecyl oleate, O. ricinoleate	PEG-60 shea butter glycerides
	Octyldodecyl stearate	PEG-70 mango glycerides
	bis-Octyldodecyl stearyl dimer dilinoleate	PEG-75
	Octyldodecyl stearyl stearate	PEG-75 lanolin, P. shea butter glycerides
	Oleamine oxide	PEG-75 shorea butter glycerides
25	Oleic/palmitoleic/linoleic glycerides	PEG-150
	Oleic alcohol	PEG/PPG-17/6 copolymer
	Oleostearine	Pentaerythrityl dioleate
	Oleyl alcohol, O. erucate, O. oleate	Pentaerythrityl
	Olive (<i>Olea europaea</i>) oil	isostearate/caprate/caprylate/adipate
30	Orange (<i>Citrus aurantium dulcis</i>) peel wax	Pentaerythrityl stearate
	Orange roughy (<i>Hoplostethus atlanticus</i>) oil	Pentaerythrityl stearate/caprate/caprylate/adipate
	Palm (<i>Elaeis guineensis</i>) oil	Pentaerythrityl tetracaprylate/tetracaprate
	Palm kernel glycerides	Pentaerythrityl tetraisononanoate, P.
	Palmitic acid	tetraistostearate
35	Panthenyl triacetate	Pentaerythrityl tetralaurate, P. tetraoctanoate
	Partially hydrogenated canola oil	Pentaerythrityl tetraoleate, P. tetrapelargonate
	Partially hydrogenated soybean oil	Pentaerythrityl tetrastearate
	Peach (<i>Prunus persica</i>) extract	Perfluorodecalin
	Peanut (<i>Arachis hypogaea</i>) oil	Perfluoropolydimethylisopropyl ether
40	PEG-2 diisononanoate, P. dioctanoate	Petrolatum
	PEG-2 milk solids	Phenethyl dimethicone
	PEG-4	Phenyl dimethicone, P. methicone, P.
	PEG-4 diheptanoate, P. dilaurate	trimethicone
	PEG-5 C8-12 alcohols citrate	Phytantriol
45	PEG-5 C14-18 alcohols citrate	Pistachio (<i>Pistacia vera</i>) nut oil
	PEG-5 hydrogenated castor oil	Placental enzymes
	PEG-5 hydrogenated castor oil trisostearate	Pollen extract
	PEG-6	Poloxamer 105 benzoate
	PEG-6 capric/caprylic glycerides	Poloxamer 182 dibenzoate
50	PEG-7 glyceryl cocoate	Polybutene
	PEG-8	Polydecene
	PEG-8 dilaurate, P. dioleate	Polydimethicone copolyol
	PEG-8/SMDI copolymer	Polyethylene glycol

	Polyglyceryl-2 diisostearate, P. tetraistearate	PPG-30
	Polyglyceryl-2 triisostearate	PPG-30 cetyl ether
	Polyglyceryl-3 diisostearate, P. oleate	PPG-40 butyl ether
5	Polyglyceryl-3 stearate	PPG-50 cetyl ether, P. oleyl ether
	Polyglyceryl-6 dioleate	PPG-51/SMDI Copolymer
	Polyglyceryl-10 decaoleate, P. decastearate	PPG-53 butyl ether
	Polyglyceryl-10 tetraoleate	Propylene glycol ceteth-3 acetate
	Polyisobutene	Propylene glycol dicaprylate
10	Polyisobutene/isohexapentacontahexane	Propylene glycol dicaprylate/dicaprate
	Polyisobutene/isooctahexacontane	Propylene glycol diisostearate, P.g. dioctanoate
	Polyisobutene/isopentacontaoctane	Propylene glycol dipalargonate
	Polyisoprene	Propylene glycol isoceteth-3-acetate
	Polyoxyethylene polyoxypropylene glycol	Propylene glycol isostearate, P.g. laurate
	Polyquaternium-2	Propylene glycol myristate
15	Polysiloxane polyalkylene copolymer	Propylene glycol myristyl ether acetate
	Poly sorbate 40	Propylene glycol stearate, SE
	Potassium dimethicone copolyol phosphate	Pumpkin (Cucurbita pepo) seed oil
	PPG-2-buteth-3	Quinoa (Chenopodium quinoa) oil
	PPG-2 lanolin alcohol ether	Rapeseed (Brassica campestris) oil
20	PPG-2 myristyl ether propionate	Rice (Oryza sativa bran oil, bran wax
	PPG-3 hydrogenated castor oil	Rice fatty acid
	PPG-3 myristyl ether	Safflower (Carthamus tinctorius) oil
	PPG-5-buteth-7	Salmon (Salmo) egg extract
	PPG-5-laureth-5	Sesame (Sesamum indicum) oil
25	PPG-5 butyl ether	Shark liver oil
	PPG-5 lanolin wax	Shea butter (Butyrospermum parkii)
	PPG-5 pentaerythrityl ether	Shea butter (Butyrospermum parkii) extract
	PPG-7-buteth-10	Shea butter, ethoxylate
30	PPG-8/SMDI copolymer	Shorea stenoptera butter
	PPG-9	Silybum marianum ethyl ester
	PPG-9-buteth-12	Sitostearyl acetate
	PPG-9 butyl ether	Skin lipids
	PPG-10 butanediol, P. cetyl ether	Slippery elm extract
35	PPG-10 methyl glucose ether	Sodium C8-16 isoalkylsuccinyl lactoglobulin sulfonate
	PPG-10 oleyl ether	Sodium carboxymethyl beta-glucan
	PPG-11 stearyl ether	Sodium ceteth-13-carboxylate
	PPG-12-buteth-16	Sodium dimethicone copolyol acetyl methyltaurate
40	PPG-12-PEG-50 lanolin	Sodium glyceryl oleate phosphate
	PPG-12-PEG-65 lanolin oil	Sodium hyaluronate, S. polymethacrylate
	PPG-12/SMDI Copolymer	Sorbeth-20
	PPG-14 butyl ether	Sorbitan isostearate, S. palmitate
	PPG-15 butyl ether, P. stearyl ether	Sorbitan sesquioleate, S. sesquisteareate
	PPG-15 stearyl ether benzoate	Sorbitan trioleate
45	PPG-16 butyl ether	Soybean (Glycine soja) oil
	PPG-18 butyl ether	Spermaceti
	PPG-20	Sphingolipids
	PPG-20-buteth-30	Squalene
50	PPG-20 cetyl ether	Stearamidopropyl cetearyl dimonium tosylate
	PPG-24-glyceth-24	Steareth-4 stearate
	PPG-26	Stearic acid, S. hydrazide
	PPG-27 glyceryl ether	Stearoxy dimethicone
	PPG-28-buteth-35	

	Stearoxymethicone/dimethicone copolymer	2-Aminobutanol
	Stearyl behenate, S. benzoate	Ammonium acrylates/acrylonitrogens copolymer
	Stearyl dimethicone, S. erucate	Arachidyl alcohol
	Stearyl heptanoate, S. propionate	Beeswax
5	Stearyl stearate	Behenamidopropyl dihydroxypropyl dimonium chloride
	Stearyl stearoyl stearate	Beheneth-5, -10, -20, -30
	Sucrose cocoate	Behenic acid
	Sunflower (<i>Helianthus annuus</i>) seed oil	Behenyl betain
10	Sweet almond (<i>Prunus amygdalus dulcis</i>) oil	Borageamidopropyl phosphatidyl PG-dimonium chloride
	Sweet cherry (<i>Prunus avium</i>) pit oil	Butyloctanol
	Synthetic jojoba oil	C12-20 acid PEG-8 ester
	Synthetic wax	C18-36 acid
	Tallow	Calcium dodecylbenzene sulfonate
	Tetradecyleicosyl stearate	Calcium protein complex
15	Tocopheryl acetate	Calcium stearate
	Tricaprin	Calcium stearoyl lactylate
	Tricaprylin	Capramide DEA
	Tricaprylyl citrate	Caprylic/capric acid
	Tricholoma matsutake extract	Caprylic/capric glycerides
20	Tridecyl behenate, T. cocoate	Castor oil, ethoxylate
	Tridecyl erucate, T. neopentanoate	Cetalkonium chloride
	Tridecyl octanoate, T. stearate	Ceteareth-2 -4 -5 -6
	Tridecyl stearoyl stearate	Ceteareth-2 phosphate
25	Tridecyl trimellitate	Ceteareth-5 phosphate
	Trihexyldecyl citrate	Ceteareth-8 -10 -11 -12
	Triisocetyl citrate	Ceteareth-10 phosphate
	Triisosteatin	Ceteareth-15 -17 -20 -25
	Triisostearyl citrate	Ceteareth-27 -29 -30 -34
30	Trilaurin	Cetearyl alcohol
	Trilinolein	Cetearyl glucoside
	Trimethylolpropane tricaprylate/tricaprate	Ceteth-2 -4 -6 -10 -12 -13
	Trimethylolpropane tricocoate	Ceteth-16 -20 -25 -30 -33
	Trimethylolpropane trilaurate	Cetethyldimonium bromide
35	Trimyrustin	Cetrimonium chloride
	Trioctanoin	Cetyl dimethicone copolyol
	Trioctyldodecyl citrate	Cetyl phosphate
	Triolein	Cholesterol
	Tripalmitin	Choleth-10 -15 -24
40	Tripropylene glycol citrate	Cocamide DEA, C. MEA
	Tristearin	Cocamidopropyl dimethylamine
	Triundecanoin	Cocamidopropyl PG-dimonium chloride phosphate
	Vegetable oil	Cocamine
45	Walnut (<i>Juglans regia</i>) oil	Coceth-7 carboxylic acid
	Wheat (<i>Triticum vulgare</i>) germ oil	Coconut acid
		Copper protein complex
	Emulsifier	Cottonseed glyceride
	Acetylated hydrogenated lard glyceride	C12-13 parath-3 -4 -9 -23
50	Acetylate hydrogenated vegetable glyceride	C16-18 parath-3 -5.5 -13 -19
	Acetylated monoglycerides	Cyclodextrin
	Acrylates/C10-C30 alkyl acrylate crosspolymer	Decaglycerol monodiolate
	Acrylates/vinyl isodecanoate crosspolymer	
	Acrylic acid/acrylonitrogens copolymer	

- DEA-cereareth-2-phosphate
DEA-ceryl phosphate
DEA-6-ylcarboxypropyloleate
DEA-oleth-3-phosphate
5 DEA-oleth-5-phosphate
DEA-oleth-10 phosphate
DEA-oleth-20-phosphate
Dicetareth-10 phosphoric acid
Diethanolamine
10 Diethylaminoethyl stearate
Diglyceryl stearate malate
Dihydrocholeth-15 -20 -30
Dihydrogenated tallow phthalic acid amide
Dilauryl acetyl dimonium chloride
15 Diolineamidopropyl dimethylamine dimethicone
copolyol phosphate
Dilinoic acid
Dimethicone copolyol almondate
Dimethicone copolyol isostearate
20 Dimethicone copolyol laurate
Dimethicone copolyol methyl ether
Cimethicone copolyol olivate
Dimethicone copolyol phthalate
Dipalmityl ethyl hydroxyethylmonium
25 methosulfate
Dipropylene glycol
Disodium hydrogenated cottonseed glyceride
sulfosuccinate
Disodium ricinoleamido MEA-sulfosuccinate
30 Disodium stearyl sulfosuccinate
Disodium sulfosuccinamide
Distearyl phthalic acid amide
N-Dodecyl-N,N-dimethyl-N-(dodecyl acetate)
ammonium chloride
35 Dodecylphenol-ethylene oxide condensate
Egg (Ovum) yolk extract
Emulsifying wax NF
Ethoxylated fatty alcohol
N-Ethylether-bis-1,4-(N-isostearylamidopropyl-
40 N,N-dimethyl ammonium chlo
Ethyl hexanediol
Euglena gracilis polysaccharide
Glycereth-26 phosphate
Glyceryl caprylate, G. caprylate/caprate
45 Glyceryl citrate/lactate/linoleate/oleate
Glyceryl cocoate, G. dilaurate
Glyceryl dilaurate, G. dioleate
Glyceryl distearate, G. hydroxystearate
Glyceryl isostearate, G. lanolate
50 Glyceryl laurate, G. linoleate
Glyceryl mono-di-tri-caprylate
Glyceryl myristate, G. oleate
Glyceryl palmitate, G. ricinoleate
Glyceryl ricinoleate SE
Glyceryl stearate, G. stearate citrate
Glyceryl stearate lactate
Glyceryl stearate SE
Glyceryl undecylenate
Glycol distearate, G. oleate
Glycol palmitate, G. stearate
Glycol stearate SE
Glycolamide stearate
Glycosphingolipids
Hydrogenated coco-glycerides
Hydrogenated cottonseed glyceride
Hydrogenated lanolin
Hydrogenated lecithin
Hydrogenated palm oil
Hydrogenated soy glyceride
Hydrogenated tallow glycerides
Hydrogenated tallow glycerides citrate
Hydroxycetyl phosphate
Hydroxylated lanolin
Hydroxylated lecithin
Hydroxyoctacosanyl hydroxystearate
Hydroxypropyl-bis-
isostearylamidopropyl dimonium chloride
Isocetareth-8 stearate
Isoceteth-10 stearate
Isoceteth-20
Isocetyl alcohol
Isolaureth-6
Isostearamidopropyl dimethylamine gluconate
Isostearamidopropyl dimethylamine glycolate
Isostearamidopropyl laurylacetodimonium
chloride
Isosteareth-2 -3 -10 -12 -20 -22 -50
Isostearth-2-octanoate
Isostearth-10 stearate
Isostearic acid
isostearyl diglyceryl succinate
Isostearylamidopropyl dihydroxypropyl
dimonium chloride
Karaya (Sterculia urens) gum
Laneth-5 -10 -15 -16 -20 -40
Laneth-10 acetate
Lanolin
Lanolin alcohol
Lanolin, ultra anhydrous
Lanolin wax
Lauramide DEA, L. MEA
Lauramidopropyl dimethylamine
Lauramidopropyl PG-dimonium chloride
Laureth-1 -2 -3 -4 -5
Laureth-2-octanoate
Laureth-3 phosphate

	Laureth-4 carboxylic acid	PEG-3 cocamide
	Laureth-5 carboxylic acid	PEG-3 C12-C18 alcohols
	Laureth-6 -7 -9 -11 -12	PEG-3 glyceryl isostearate
	Laureth-11 carboxylic acid	PEG-3 glyceryl trisostearate
5	Laureth-16 -20 -23 -25 -30	PEG-3 glyceryl tristearate
	Laury PCA	PEG-3 lanolate, P. sorbitan oleate
	Laurylmethicone copolyol	PEG-3 stearate
	Lecithin	PEG-4 dioleate, P. diisostearate
	Linoleamidopropyl PG-dimonium chloride	PEG-4 dilaurate, P. distearate
10	phosphate	PEG-4 glyceryl distearate
	Lithium stearate	PEG-4 laurate, P. oleate
	Magnesium sulfate hepta-hydrate	PEG-4 stearate
	Maleated soybean oil	PEG-4 stearyl stearate
	Methoxy PEG-17/dodecyl glycol copolymer	PEG-4 tallate
15	Methyl gluceth-20 distearate	PEG-5 castor oil, P. cocamine
	methyl glucose dioleate, M.g. sesquiosstearate	PEG-5 C12-C18 alcohols
	Methyl glucose sesquisteate	PEG-5 glyceryl isostearate
	MEA-laureth sulfate	PEG-5 glyceryl sesquioleate
	Myreth-3 -4 -7	PEG-5 glyceryl stearate
20	Myreth-3 myristate	PEG-5 glyceryl trisostearate
	Myristamidopropyl dimethylamine	PEG-5 lanolate, P. oleamine
	Nonoxynol-1 -2 -4 -5 -6 -7	PEG-5 soy sterol, P. soyamine
	Nonoxynol-8 -9 -10 -11 -12 -13	PEG-5 stearamine, P. stearate
	Nonoxynol-14 -15 -18 -20 -30 -40 -50	PEG-5 tallow amine
25	Nonyl nonoxynol-5 -10	PEG-6 capric/caprylic glycerides
	Oat (Avena sativa) flour	PEG-6 cocamide
	Octoxynol-1 -3 -5 -8 -10	PEG-6 C12-14 ether
	Octoxynol 16, 30, 40	PEG-6 dilaurate, P. dioleate
	2-Octyl dodecyl alcohol	PEG-6 distearate, P. isostearate
30	Octyldodecanol	PEG-6 lauramide, P. laurate
	Octyldodeceth-20 -25	PEG-6 oleate, P. palmitate
	Oleamide DEA	PEG-6 sorbitan beeswax
	Oleamidopropyl dimethylamine	PEG-6 sorbitan laurate
	Oleamine oxide	PEG-6 sorbitan oleate
35	Oleic acid	PEG-6 sorbitan stearate
	Oleth-2 -3 -4 -5 -6 -7 -8 -9	PEG-6 stearate
	Oleth-10 -12 -15 -20 -23	PEG-6-32
	Oleth-25 -30 -40 -50	PEG-6-32 stearate
	Oleth 13	PEG-7 glyceryl cocoate
40	Oleth-2 phosphate	PEG-7 hydrogenated castor oil
	Oleth-3 phosphate	PEG-7 oleate
	Oleth-5 phosphate	PEG-7.5 tallowamine
	Oleth-10 phosphate	PEG-8
	Oleth-20 phosphate	PEG-8 beeswax, P. castor oil
45	Palm acid	PEG-8 C12-14 ether
	Palmitamidopropyl dimethylamine	PEG-8 dilaurate, P. dioleate
	Palmitic acid	PEG-8 distearate
	PEG-2 cocamine, P. distearate	PEG-8 glyceryl laurate
	PEG-2 hydrogenated tallow amine	PEG-8 laurate, P. oleate
50	PEG-2 laurate, P. laurate SE	PEG-8, P. tallate
	PEG-2 oleamine, P. oleate	PEG-9 castor oil
	PEG-2 soyamine, P. stearamine	PEG-9 diisostearate
	PEG-2 stearate, P. stearate SE	PEG-9 dioleate, P. distearate

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| | PEG-9 laurate, P. oleate | PEG-23 oleate, P. stearate |
| | PEG-9 stearate | PEG-24 hydrogenated lanolin |
| | PEG-10 castor oil, P. cocamine | PEG-25 castor oil |
| | PEG-10 coconut oil esters | PEG-25 phytosterol |
| 5 | PEG-10 C12-18 alcohols | PEG-25 propylene glycol stearate |
| | PEG-10 dioleate | PEG-25 soy stearyl, P. stearate |
| | PEG-10 glyceryl isostearate | PEG-29 castor oil |
| | PEG-10 hydrogenated castor oil | PEG-30 castor oil |
| 10 | PEG-10 hydrogenated castor oil triisostearate | PEG-30 dipolyhydroxystearate |
| | PEG-10 lanolate | PEG-30 glyceryl cocoate |
| | PEG-10 polyglyceryl-2 laurate | PEG-30 glyceryl isostearate |
| | PEG-10 sorbitan laurate | PEG-30 glyceryl laurate |
| | PEG-10 soy sterol, P. stearamine | PEG-30 glyceryl oleate |
| | PEG-10 stearate | PEG-30 glyceryl stearate |
| 15 | PEG-11 babassu glycerides | PEG-30 hydrogenated castor oil |
| | PEG-11 castor oil | PEG-30 lanolin |
| | PEG-12 dilaurate, P. dioleate | PEG-30 sorbitan tetraoleate |
| | PEG-12 distearate | PEG-32 dilaurate, P. dioleate |
| | PEG-12 glyceryl dioleate | PEG-32 distearate, P. laurate |
| 20 | PEG-12 laurate, P. oleate | PEG-32 oleate, P. stearate |
| | PEG-12 stearate, P. tallate | PEG-33 castor oil |
| | PEG-14 avocado glycerides | PEG-35 castor oil, P. stearate |
| | PEG-15 castor oil | PEG-40 castor oil |
| | PEG-15 cocamine | PEG-40 glyceryl isostearate |
| 25 | PEG-15 glyceryl isostearate | PEG-40 glyceryl laurate |
| | PEG-15 glyceryl laurate | PEG-40 glyceryl triisostearate |
| | PEG-15 glyceryl ricinoleate | PEG-40 hydrogenated castor oil |
| | PEG-15 oleamine, P. oleate | PEG-40 hydrogenated castor oil PCA isostearate |
| | PEG-15, P. stearamine | PEG-40 sorbitan diisostearate |
| 30 | PEG-15 tallow amine | PEG-40 sorbitan lanolate |
| | PEG-15 tallow polyamine | PEG-40 sorbitan tetraoleate |
| | PEG-16 | PEG-40 stearate |
| | PEG-16 hydrogenated castor oil | PEG-40/dodecyl glycol copolymer |
| | PEG-16 soy sterol | PEG-42 babassu glycerides |
| 35 | PEG-18 stearate | PEG-44 sorbitan laurate |
| | PEG-20 almond glycerides | PEG-45 palm kernel glycerides |
| | PEG-20 castor oil, P. dilaurate | PEG-45 safflower glycerides |
| | PEG-20 dioleate, P. distearate | PEG-50 lanolin, P. stearamine |
| | PEG-20 glyceryl laurate | PEG-50 stearate |
| 40 | PEG-20 glyceryl oleate | PEG-60 almond glycerides |
| | PEG-20 glyceryl stearate | PEG-60 castor oil |
| | PEG-20 glyceryl triisostearate | PEG-60 corn glycerides |
| | PEG-20 glyceryl tristearate | PEG-60 glyceryl triisostearate |
| | PEG-20 hydrogenated castor oil | PEG-60 hydrogenated castor oil |
| 45 | PEG-20 hydrogenated lanolin | PEG-60 hydrogenated castor oil isostearate |
| | PEG-20 lanolin, P. laurate | PEG-60 hydrogenated castor oil triisostearate |
| | PEG-20 oleate | PEG-60 shea butter glycerides |
| | PEG-20 methyl glucose sesquisteate | PEG-60 sorbitan tetraoleate |
| | PEG-20 sorbitan beeswax | PEG-70 mango glycerides |
| 50 | PEG-20 sorbitan isostearate | PEG-75 |
| | PEG-20 sorbitan triisostearate | PEG-75 castor oil, P. dilaurate |
| | PEG-20 sorbitan trioleate | PEG-75 dioleate, P. distearate |
| | PEG-20 stearate, P. tallow amine | PEG-75 lanolin, P. laurate |

	PEG-75 oleate	Polyglyceryl-10 trioleate
	PEG-75 shea butter glycerides	Polyoxyethylene polyoxypropylene glycol
	PEG-75 shorea butter glycerides	Polyquaternium-5, -31
	PEG-75 stearate	Polysorbate 20, 21, 40, 60, 61
5	PEG-80 sorbitan laurate	Polysorbate 65, 80, 81, 85
	PEG-90 stearate	Potassium alginate, P. cetyl phosphate
	PEG-100 castor oil	Potassium laurate, P. myristate
	PEG-100 hydrogenated castor oil	Potassium tallowate
10	PEG-100 lanolin, P. stearate	PPG-1-PEG-9 lauryl glycol ether
	PEG-120 distearate	PPG-2-ceteareth-9
	PEG-150 dilaurate, P. dioleate	PPG-3 isosteareth-9
	PEG-150 distearate, P. lanolin	PPG-3 PEG-6 oleylether
	PEG-150 laurate, P. oleate	PPG-5-buteth-7
	PEG-150 stearate	PPG-5-ceteth-20
15	PEG-200 castor oil	PPG-5-ceteth-10 phosphate
	PEG-200 glyceryl stearate	PPG-8 oleate
	PEG-200 hydrogenated castor oil	PPG-10 cetyl ether phosphate
	PEG-200 laurate, P. oleate	PPG-12-PEG-50 lanolin
	PEG-400 laurate	PPG-15 stearyl ether
20	Phosphate esters	PPG-24-buteth-27
	Phosphated amine oxides	PPG-25 laureth-25
	Phospholipids	PPG-26-buteth-26
	Poloxamer 101, 105, 122, 123, 124	PPG-26 oleate
	Poloxamer 181, 182, 184, 185, 235, 237	PPG-36 oleate
25	Poloxamer 238, 334, 338, 407	Propylene glycol alginate, P.g. dioleate
	Polyglyceryl-2 oleate	Propylene glycol hydroxystearate
	Polyglyceryl-2 polyhydroxystearate	Propylene glycol laurate, P.g. ricinoleate
	Polyglyceryl-2 sesquiosate	Propylene glycol ricinoleate SE
	Polyglyceryl-2 stearate	Propylene glycol stearate
30	Polyglyceryl-2-PEG-4-distearate	Propylene glycol stearate, SE
	Polyglyceryl-2-PEG-4-stearate	Quaternium-33
	Polyglyceryl-3 diisostearate, P. dioleate	Rapeseedamidopropyl ethyldimonium ethosulfate
	Polyglyceryl-3 distearate	Rice (Oryza sativa) bran wax
	Polyglyceryl-3 methylglucose distearate	Ricinoleamide DEA
35	Polyglyceryl-3 oleate, P. polyricinoleate	Ricinoleic acid
	Polyglyceryl-3 stearate	Saponins
	Polyglyceryl-4 oleate, P. stearate	Selenium protein complex
	Polyglyceryl-6 dioleate, P. distearate	Silicone quaternium-5, -6
	Polyglyceryl-6 laurate, P. myristate	Sodium acrylates vinyl isodecanoate
40	Polyglyceryl-6 oleate, P. polyricinoleate	crosspolymer
	Polyglyceryl-6 stearate	Sodium caproyl lactylate
	Polyglyceryl-8 oleate	Sodium carbomer
	Polyglyceryl-10 decaoleate	Sodium cetyl sulfate
	Polyglyceryl-10 diisostearate	Sodium C12-15 pareth-15 sulfonate
45	Polyglyceryl-10 dioleate, P. dipalmitate	Sodium isostearoyl lactylate
	Polyglyceryl-10 distearate, P. isostearate	Sodium laureth-17 carboxylate
	Polyglyceryl-10 laurate, P. linoleate	Sodium lauroyl lactylate
	Polyglyceryl-10 mixed fatty acids	Sodium lauryl sulfate
	Polyglyceryl-10 myristate	Sodium nonoxynol-6 phosphate
50	Polyglyceryl-10 oleate	Sodium octyl sulfate
	Polyglyceryl-10 pentastearate	Sodium oleate
	Polyglyceryl-10 stearate	Sodium oleyl sulfate
	Polyglyceryl-10 tetraoleate	Sodium phosphate

	Sodium stearoyl lactylate	Artemisia apiacea extract
	Sorbeth-20	Brassica rapa-depressa extract
	Sorbitán isostearate, S. laurate	Caraway (Carum carvi) oil
	Sorbitan oleate, S. palmitate	Cardamon (Elettaria cardamomum) oil
5	Sorbitan sesquiossearate	Clove (Eugenia caryophyllus) oil
	Sorbitan sesquiossearate, S. sesquiossearate	Eclipta alba extract
	Sorbitan searate, S. triossearate	Eucalyptus globulus oil
	Sorbitan trioleate, S. tristearate	Euphorium fortunei extract
10	Soyamidopropyl dimethylamine	Euterpe precatoria extract
	Soyamine	Hierochloe odorata extract
	Stearamide DEA	Kadsura hetililoca extract
	Stearamide DIBA-stearate	Ligustrum lucidum extract
	Stearamidoethyl diethylamine	Lysimachia foenum-graecum extract
	Stearamidopropyl dimethylamine, lactate	Melaleuca bracteata extract
15	Stearamidopropyl PG-dimonium chloride phosphate	Melaleuca hypericifolia extract
	Stearamine	Melaleuca symphyocarp extract
	Stearamine oxide	Melaleuca uncinata extract
	Steareth-2, -4, -6, -7, -10, -11, -13	Melaleuca wilsonii extract
20	Steareth-2 phosphate	Nasturtium sinensis extract
	Steareth-15, -20, -21, -30, -100	Nelumbium speciosum extract
	Stearic acid	Paulownia imperialis extract
	Sucrose cocoste, S. distearate	Rosemary (Rosmarinus officinalis) oil
	Sucrose stearate	Selinum spp. extract
25	Sythetic beeswax	Trichomonas japonica extract
	Tallow glyceride, acetylated hydrogenated	Withania somniferum extract
	Tallowamide DEA	Yuzu oil
	Tallowamidopropyl dimethylamine	Ziziphus jujuba extract
	Talloweth-6	
30	Tetrasodium dicarboxyethyl stearyl sulfosuccinamide	Exfoliant
	TEA-acrylates/acrylonitrogens copolymer	Apricot (Prunus armeniaca) kernel powder
	Tissue extract	Glycolic acid
	Triceteareth-4 phosphate	Jojoba (Buxus chinensis) seed powder
35	Trideceth-3, -5, -6, -7, -8	Lactic acid Papain
	Trideceth-9, -10, -12, -15	PEG 11-Avocado Glycerides
	Tridecyl ethoxylate	Willow (Salix alba) bark extract
	Triethanolamine	
	Trilaureth-4 phosphate	Fiber
40	Triolein	Corn (Zea mays) cob powder
	Trisodium HEDTA	Nylon-66
	Tristearin	Oat (Avena sativa) bran, meal
		Rayon
	Enzyme	Film former
45	Fermented vegetable	Acetylated lanolin
	Ganoderma lucidum oil	Acrylates/hydroxyesters acrylates copolymer
	Lipase	Acrylate/octylarylamide copolymer
	Papain	Acrylate copolymer alkylated
	Soy (Glycine soja) protein	polyvinylpyrrolidone
50	Superoxide dismutase	Ammonium acrylates/acrylonitrogens copolymer
		Betaglucan
		Bladderwrack (Fucus vesiculosus) extract
	Essential oil	Carboxymethylchitosan
	Aesculus chinensis extract	N,O-Carboxymethylchitosonium

	Chitosan lactate	Souble wheat protein
	Collagen	TEA-acrylates/acrylonitriloxgens copolymer
	Collagen phthalate	Tosylamide/epoxy resin
	Colloidal oatmeal	Tricontanil PVP
5	Desamido collagen	Triethonium hydrolyzed collagen ethosulfate
	Diisostearyl trimethylolpropane siloxy silicate	Wheat peptide
	DMHF	
	Ethyl ester of hydrolyzed silk	Fixative
	Ethylcellulose	Acrylates copolymer
10	Gellan gum	Adipic acid/dimethylaminohydroxypropyl diethylene triamine copolymer
	Glycerin/diethylene glycol/adipate crosspolymer	AMP-acrylates copolymer
	High beta-glucan barley flour	Hydrolyzed zein
	Hydrolyzed collagen	Methacryloyl ethyl betaine/acrylates copolymer
15	Hydrolyzed keratin	Methyl rosinat
	Hydrolyzed oat protein	Polyquaternium-4, -10, -29
	Hydrolyzed pea protein	PPG-20 methyl glucose ether
	Hydrolyzed reticulin	Sodium polystyrene sulfonate
	Hydrolyzed RNA	
	Hydrolyzed silk	
20	Hydrolyzed soy protein	Flavor (aroma)
	Hydrolyzed wheat protein	Benzaldehyde
	Hydrolyzed wheat protein/dimethicone copolyol phosphate copolymer	Caraway (Carum carvi) oil
	Hydrolyzed wheat protein/PVP copolymer	Cardamon (Elettaria cardamomum) oil
25	Hydroxypropylcellulose	Cinnamon (Cinnamomum casia) oil
	Hydroxypropyltrimonium gelatin	Clove (Eugenia caryophyllus) oil
	Jojoba (Buxus chinensis) oil	Ethyl vanillin
	Lactoglobulin	Eucalyptus globulus oil
	Myristoyl hydrolyzed collagen	Flavor (aroma)
30	Nitrocellulose	Glutamic acid
	Oat (Avena sativa) extract, protein	Glycyrrhetic acid
	Polyethylene, ionomer	Glycyrrhizic acid
	Polyquaternium-6, -7, -11, -22, -39	Glycyrrhizin, ammoniated
	Polyvinyl acetate, P. alcohol	Methyl salicylate
35		Orange (Citrus aurantium dulcis) oil
	PVP/MA decadiene crosspolymer	Peppermint (Mentha piperita) oil
		Rosemary (Rosmarinus officinalis) oil
		Sodium glycyrrhizinate
		Thymol Vanillin
	PVP/Dimethiconylacrylate/polycarbamyl/polyglycol ester	
40	PVP/dimethylaminoethylmethacrylate copolymer	Foam booster
	PVP/dimethylaminoethylmethacrylate/polycarbamyl/polyglycol ester	Alkyl dimethylamine oxide
	PVP/eicosene copolymer	Babassuamidopropyl betaine
	PVP/hexadecene copolymer	Babassuamidopropylamine oxide
45	PVP/hydrolyzed wheat protein copolymer	Caprylyl pyrrolione
	Rice peptide	Carraegeenan (Chondrus crispus)
	Sericin	Cocamide DEA, C. MIPA
	Shea butter (Butyrospermum parkii)	Cocamidopropyl betaine
	Shellac	Cocamidopropyl dimethylamine lactate
50	Sodium C12-15 parath-7 sulfonate	Cocamidopropyl hydroxysultaine
	Sodium hyaluronate	Coco-betaine
	Souble collagen	Coco/oleamidopropyl betaine
	Souble keratin	Cocoyl amido hydroxy sulfo betaine
		Cocoyl monoethanolamide ethoxylate

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| | DEA-hydrolyzed lecithin | Myristamide DEA, M. MEA |
| | Dimethyl lauramine | Oleamide MEA |
| | Disodium cocamido MEA-sulfosuccinate | Palmitamide MEA |
| | Disodium cocoamphodiacetate | PEG-3 lauramide |
| 5 | Disodium lauramido MEA-sulfosuccinate | PEG-4 oleamide |
| | Disodium laureth sulfosuccinate | Ricinoleamide MEA |
| | Lauramide MIPA | Sesamide DEA |
| | Lauramidopropyl betaine | Wheat germamide DEA |
| | Lauryl betaine | |
| 10 | Myristamidopropyl dimethylamine dimethicone copolyol phosphate | Foamer |
| | Myristamine oxide | Ammonium laureth sulfate |
| | Octyldodecyl benzoate | Ammonium laureth-5 sulfate |
| | Oleamide DEA, O. MIPA | Ammonium laureth-12 sulfate |
| 15 | Oleyl betain | Ammonium lauryl sulfate, A.1. sulfosuccinate |
| | Palm kernelamide DEA | Ammonium myreth sulfate |
| | PEG-3 lauramine oxide | Ammonium nonoxynol 4 sulfate |
| | PPG-15 stearyl ether benzoate | Capryl caprylylglicoside |
| | PEG-7000 | Cetyl betaine |
| 20 | Sodium cocoamphoacetate | Cocamide |
| | Sodium cocoyl isethionate | Cocamidopropyl dimethylamine |
| | Sodium laureth sulfate | Cocamidopropyl dimethylamine lactate |
| | Sodium lauroyl wheat amino acids | DEA-laureth sulfate |
| | Sodium octoxynol-2 ethane sulfonate | DEA lauryl sulfate |
| 25 | Soyamidopropyl betaine | Decyl glucoside |
| | Tallowamide MEA | Disodium caproamphodiacetate |
| | | Disodium caproamphodipropionate |
| | | Disodium capryloamphodiacetate |
| | | Disodium cocoamphodipropionate |
| | | Disodium lauroamphodiacetate |
| | | Disodium lauroamphodipropionate |
| 30 | Babassuamidopropylamine oxide | Disodium lauryl sulfosuccinate |
| | Behenamine oxide | Disodium oleamido MEA-sulfosuccinate |
| | Caprylyl pyrrolidone | Disodium oleamido MIPA-sulfosuccinate |
| | Cetamine oxide | Disodium PEG-4 cocoamido MIPA-sulfosuccinate |
| | Cocamide DEA, C. MEA, C. MIPA | |
| | Cocamidopropyl betaine | |
| 35 | Cocamidopropyl hydroxysultaine | Isostearamidopropylamine oxide |
| | Cocamidopropyl lauryl ether | Lauryl glucoside |
| | Cocamidopropylamine oxide | Methyl gluceth-20 |
| | Cocamine oxide | MEA-laureth sulfate |
| | Dihydroxyethyl C12-15 alkoxypropylamine oxide | Mixed isopropanolamines myristate |
| 40 | Dihydroxyethyl cocamine oxide | MIPA-lauryl sulfate |
| | Dihydroxyethyl tallowamine oxide | PEG-80 sorbitan laurate |
| | Erucamidopropyl hydroxysultaine | PEG lauryl ether sulfate |
| | Hydroxypropyl methylcellulose | Potassium cocoate, P. lauryl sulfate |
| | Isostearamide DEA | Quillaja saponaria extract |
| 45 | Lauramide DEA, L. MEA | Sodium caproamphoacetate |
| | Lauramido propylamine oxide | Sodium capryloamphoacetate |
| | Lauramine oxide | Sodium capryloamphohydroxypropylsulfonate |
| | Laureth-10 | Sodium cocoamphoacetate |
| | Lauric-linoleic DEA | Sodium cocoamphopropionate |
| 50 | Lauroyl-linoleoyl diethanolamide | Sodium C12-15 pareth-25 sulfate |
| | Lauroyl-myristoyl diethanolamide | Sodium C12-15 pareth-3 sulfonate |
| | Lauryl pyrrolidone | Sodium C12-15 pareth-15 sulfonate |
| | Linoleamide MEA | |

	Sodium C14-16 olefin sulfonate	Ziziphus jujuba extract
	Sodium deceth sulfate	
	Sodium laureth-2 sulfate	Gellant
5	Sodium laureth-3 sulfate	Acrylic acid/acrylonitril copolymer
	Sodium laureth-7 sulfate	Agar
	Sodium lauriminodipropionate	Algin
	Sodium lauryl ether sulfosuccinate	Aluminum distearate, A. tristearate
	Sodium lauryl sulfate, S.I. sulfoacetate	Ammonium acrylates/acrylonitril copolymer
10	Sodium lauryl sulfosuccinate	Behenic acid
	Sodium magnesium laureth sulfate	Calcium alginate
	Sodium myreth sulfate, S. myristyl sulfate	Carbomer
	Sodium trideceth sulfate	Carboxymethylchitosan
	Sodium tridecyl sulfate	N,O-Carboxymethylchitosonium
	TEA-dodecylbenzenesulfonate	Carrageenan (Chondrus crispus)
15	TEA-laureth sulfate	Ceresin
	TEA-lauroyl collagen amino acids	Cetearyl candelillate
	TEA-lauroyl keratin amino acids	Dibenzylidene sorbitol
	TEA-lauryl sulfate	Ethylene/acrylic acid copolymer
	TEA-palm kernel sarcosinate	Ethylene/VA copolymer
20	Wheat germamidopropyl betain	Gellan gum
	Yucca vera extract	Hexanediol behenyl beeswax
		Hydrogenated jojoba oil
		Hydrogenated jojoba wax
	Fragrance	Hydroxystearic acid
25	Chamaecyparis obtusa oil	Jojoba wax
	Orange (Citrus aurantium dulcis) oil	Laneth-5, -15
	Peppermint (Mentha piperita) oil	Montmorillonite
	Phenethyl alcohol	Myreth-3-octanoate
		Octacosanyl stearate
30	Fragrance solvent	Oleth-3 phosphate
	Benzyl benzoate	Oleth-10 phosphate
	Diethyl phthalate	Poloxamer 105, 123, 124, 185, 235
	Triacetin	Poloxamer 237, 238, 338, 407
	Triethyl citrate	Polyethylene
35	Fungicide	Polyethylene, oxidized
	Astrocaryum murumuru extract	Polyquaternium-31
	Azadirachta indica extract	Potassium alginate, P. chloride
	Captan	Sodium nonoxynol-6 phosphate
	Diiodomethyltolylsulfone	Sodium tallowate
40	Ficus racemosa extract	Synthetic beeswax
	Hexetidine	TEA-acrylates/acrylonitril copolymer
	Ligusticum jeholense extract	Tribehenin
	Mauritia flexosa extract	
	Melaleuca symphyocarp extract	Glosser
45	Melia australasica extract	C18-36 acid glycol ester
	Melia azadirachta extract	Diphenyl dimethicone
	Mushroom (Cordyceps sabolifera) extract	Methyl gluceth-10
	Mushroom (Coriolus versicolor) extract	Octyldodecyl lactate
	Sodium undecylenate	Phenyl methicone, P. trimethicone
50	Tea tree (Melaleuca alternifolia) oil	Polyglyceryl-2 dioleate
	Thiabendazole	Polyisobutene
	Undecylenamide MEA	Polyisobutene/isohexapentacontahexane
	Zinc undecylenate	Polyisobutene/isooctahexacontane

- Polymethacrylamidopropyltrimonium chloride
PPG-10 methyl glucose ether
PPG-36 oleate
Tea (*Camellia sinensis*) oil
5 Tribehenin
- Hair care**
Gentiana scabra extract
Maidenhair fern extract
10 Nicotinamide
Nicotinic acid
Paeonia lactiflora extract
Watercress (*Nasturtium officinale*) extract
- 15 **Hair conditioner**
Amino bispropyl dimethicone
Amodimethicone
AMPD-isostearoyl hydrolyzed collagen
Aqua Ichthammol
20 Babassu (*Orbignya oleifera*) oil
Babassuamidopropylalkonium chloride
Behenamidopropyl dimethylamine
Behenamidopropyl hydroxyethyl dimonium
chloride
25 Behentrimonium chloride
Biotin
Bishydroxyethyl bisethyl malonamide
Borageamidopropyl phosphatidyl PG-dimonium
chloride
30 Brazil nut (*Bertholletia excelsa*) oil
Cetearyl trimonium methosulfate
Cetrimonium bromide, C. chloride
Cetyl pyridinium chloride
Chia (*Salvia hispanica*) oil
35 Chrysanthemum morifolium extract
Cinchona succirubra extract
Cocamidopropyl dimethylamine propionate
Cocinea indica extract
Cocodimonium hydroxypropyl hydrolyzed
collagen
40 Cocodimonium hydroxypropyl hydrolyzed
keratin
Cocodimonium hydroxypropyl silk amino acids
Cocodimonium hydroxypropyl hydrolyzed wheat
protein
45 Cocodimonium hydroxypropyloxyethyl cellulose
Cocotrimonium chloride
Collagen amino acids
Cyclomethicone
50 L-cysteine HCL
Dibehenylidimonium methosulfate
Dicetylidimonium chloride
Dicocodimonium chloride
- Dihydroxyethyl tallowamine oleate
Dimethicone
Dimethicone copolyol acetate, D.c. almondate
Dimethicone copolyol amine
Dimethicone copolyol bishydroxyethylamine
Dimethicon copolyol isostearate, D.c. laurate
Dimethicone copolyol olivate
Dimethicone hydroxypropyl trimonium chloride
Dimethyl lauramine dimer diinoleate
Dioleamidoethyl hydroxyethylmonium
methosulfate
Dipalmitoylethyl hydroxyethylmonium
methosulfate
Diphenyl dimethicone
Ditalowdimonium chloride
N-Dodecyl-N,N-dimethyl-N-(dodecyl acetate)
ammonium chloride
Entada phaseoloides extract
Ethyl ester of hydrolyzed animal protein
Gelatin
Ginseng hydroxypropyltrimonium chloride
butylene glycol
Hematin
Honey (Mel)
Hydrolyzed collagen
Hydrolyzed hair keratin
Hydrolyzed vegetable protein
Hydrolyzed wheat protein/dimethicone copolyol
acetyl copolymer
Hydrolyzed wheat protein hydroxypropyl
polysiloxane
Hydroxyethyl cetylidimonium phosphate
Hydroxypropyl trimonium hydrolyzed collagen
Hydroxypropyl trimonium hydrolyzed wheat
protein polysiloxane copolymer
Hyssop (*Hyssopus officinalis*) extract
Inga edulis extract
Isostearamidopropylamine oxide
Isostearoyl hydrolyzed collagen
Keratin amino acids
Kiwi (*Actinidia chinensis*) fruit extract
Kola (*Cola acuminata*) extract
Laminaria japonica extract
Laurtrimonium chloride
Lauryl hydroxypropyl trimonium polysiloxane
copolymer
Laurylidimethylamine isostearate
Laurylidimonium hydroxypropyl hydrolyzed
collagen
Laurylidimonium hydroxypropyl hydrolyzed
wheat protein
Linoleamidopropyl dimethylamine dimer
diinoleate

- | | | |
|----|---|---|
| | Linoleamidopropyl dimethylamine | Tallowbenzyl dimethylammonium chloride, |
| | Lysimachia foenum-graecum extract | hydrogenated |
| | Melaleuca hypericifolia extract | Tallowtrimonium chloride |
| | Ocimum santum extract | Tea (Camellia sinensis) oil |
| 5 | Olealkonium chloride | TEA-cocoyl hydrolyzed soy protein |
| | Oleyl dimethylamidopropyl ethonium ethosulfate | Thenoyl methionate |
| | Palmitamidodecanediol | Trimethylsilylamodimethicone |
| | Panthenyl ethyl ether | Wheat amino acids |
| | Paulownia imperialis extract | |
| 10 | Peach (Prunus perisica) leaf extract | |
| | PEG-2 cocomonium chloride | |
| | PEG-120 jojoba acid/alcohol | |
| | PG-hydroxycellulose lauryldimonium chloride | |
| 15 | PG-hydroxyethylcellulose cocodimonium chloride | |
| | PG-hydroxyethylcellulose lauryldimonium chloride | |
| | PG-hydroxyethylcellulose stearyldimonium chloride | |
| 20 | Phenyl trimethicone | |
| | Phospholipids | |
| | Phytantriol | |
| | Polyoxyethylene polyoxypropylene glycol | |
| | Polypropylene glycol | |
| 25 | Polyquaternium-4, -6, -7, -10 | |
| | Polyquaternium-22, -28, -39 | |
| | PPG-5-ceteth-10 phosphate | |
| | Propyltrimonium hydrolyzed collagen | |
| | propyltrimonium hydrolyzed soy protein | |
| 30 | Quaternium-18, -75, -81, -82 | |
| | Quaternium-79 hydrolyzed keratin | |
| | Quaternium-79 hydrolyzed silk | |
| | Sambucus nigra extract, oil | |
| | Sesamidopropalkonium chloride | |
| 35 | Silicone quaternium-1, -8 | |
| | Sodium cocoamphoacetate | |
| | Sodium cocoyl hydrolyzed collagen | |
| | Sodium polystyrene sulfonate | |
| | N-Soya-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate | |
| 40 | Steapyrium chloride | |
| | Stearalkonium chloride | |
| | Stearamidopropyl dimethylamine | |
| | Stearidimonium hydroxypropyl hydrolyzed wheat protein | |
| 45 | STeartrimonium chloride | |
| | Steartrimonium hydroxyethyl hydrolyzed collagen | |
| | N-Stearyl-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate | |
| 50 | Stenocalyx micalii extract | |
| | Sulfur | |

- Hair set resin polymer**
 Acrylates/acrylamide copolymer
 Acrylates/PVP copolymer
 Acrylates/hydroxyesters acrylates copolymer
 Acrylates/octylacrylamide copolymer
 AMP-acrylates copolymer
 Butylester of PVM-MA copolymer
 Carboxylated vinylacetate terpolymer
 Diglycol/CHDM/isophthalates/SIP copolymer
 Eclipta alba extract
 Ethyl ester of PVM/MA copolymer
 Hydroxypropyl chitosan
 Isopropyl ester of PVM/MA copolymer
 Octylacrylamide/acrylates/butylaminoethyl methacrylate copolymer
 Polymethacrylamidopropyltrimonium chloride
 Polypropylene glycol oligosuccinate
 PVP
 PVP/dimethylaminoethylmethacrylate copolymer
 PVP/Polycarbamyl polyglycol ester
 PVP/VA copolymer
 PVP/VA vinyl propionate copolymer
 Sodium polyacrylate
 VA/butyl maleate/isobornyl acrylate copolymer
 VA/crotonates/vinyl neodecanoate copolymer
 VA/crotonates/vinyl propionate copolymer
 VA/crotonates copolymer
 Vinyl caprolactam/PVP/dimethylaminoethylmethacrylate copolymer
- Hair sheen**
 Maidenhair fern extract
 Tetrabutoxypropyl methicone
- Hair waving**
 Ammonium thioglycolate, A. thiolactate
 Argania spinosa oil
 L-cysteine HCL
 Cystine
 Diammonium dithiodiglycolate
 Dilauryl thiodipropionate
 Ethanolamine sulfite, E. thioglycolate
 Ethanolamine thiolactate
 Glyceryl thioglycolate
 Hydroxymethyl dioxazobicyclooctane
 Jojoba esters
 Monoethanolamine thiolactate
 Shea butter, ethoxylated
 Sodium thioglycolate
 Thioglycerin
 Thioglycolic acid
 Thiolactic acid
- Humectant**
 Acetamide MEA
 Acetyl monoethanolamine
 6-(N-Acetylamino)-4-oxyhexyltrimonium chloride
 Adenosine phosphate
 Ammonium lactate
 Atelocollagen
 Calcium pantothenate
 Calcium stearoyl lactylate
 Carboxymethyl chitin
 Carboxymethyl chitosan succinamide
 Chitosan PCA
 Cholesteryl hydroxystearate
 Collagen amino-polysiloxane hydrolyzate
 Colloidal oatmeal
 Copper PCA methylsilanol
 Dimethicone copolyol laurate
 Dipotassium glycyrrhizinate
 Ethyl ester of hydrolyzed silk
 Fatty quaternary amine chloride complex
 Glucos glutamate
 Glycereth-4,5-lactate
 Glycereth-7, -12, -26
 Glycerin
 Honey extract
 Hydrogenated passion fruit oil
 Hydrolyzed casein
 Hydrolyzed fibronectin
 Hydrolyzed glycosaminoglycans
 Hydrolyzed oat protein
 Hydrolyzed silk
 Hydrolyzed soy protein
 Hydroxypropyl chitosan
 Hydroxypropyltrimonium hydrolyzed casein
 Hydroxypropyltrimonium hydrolyzed silk
 Hydroxypropyltrimonium hydrolyzed soy protein
 Hydroxypropyltrimonium hydrolyzed wheat protein
 Keratin amino acids
 Lactamide DGA, MEA
 Lactamidopropyl trimonium chloride
 Lactic acid
 Lactose
 Lauroyl lysine
 Maltitol
 Mannitol
 Methyl gluceth-10, -20
 Natto gum
 Oat (Avena sativa) extract, protein
 Panthenol
 Panthenyl ethyl ether
 PCA

- PEG-4
Polyamino sugar condensate
Potassium lactate
Propylene glycol
5 Propyltrimonium hydrolyzed collagen
propyltrimonium hydrolyzed soy protein
Propyltrimonium hydrolyzed wheat protein
Quaternium-22
Rice (*Oryza sativa*) germ oil
10 Sea Salts (*Maris sal*)
Shea butter (*Butyrospermum parkii*)
Silk powder
Sodium behenoyl lactylate
Sodium caproyl lactylate
15 Sodium cocoyl lactylate
Sodium hyaluronate
Sodium isostearoyl lactylate
Sodium lactate, S. lauroyl lactylate, S. PCA
Sodium polyglutamate
20 Sodium stearyl lactylate
Sorbitan laurate
Sorbitan sesquistearate
Sorbitol
Sphingolipids
25 TEA-PCA
Urea
- Hydrotrope**
Ammonium cumenesulfonate
30 Ammonium xylenesulfonate
Cetamine oxide
Cocamidopropylamine oxide
Lauramine oxide
Potassium toluenesulfonate
35 PPG-2-isodeceth-4, -6, -9, -12
Sodium cumene sulfonate
Sodium laureth-13-carboxylate
Sodium toluene sulfonate
Sodium xylene sulfonate
40 Trideceth-19-carboxylic acid
- Intermediate**
Caprylic acid
Deceth-3
45 Diethyl succinate
Dimethylaminopropylamine
DM hydantoin
Dodecylbenzene sulfonic acid
Ethylene dichloride
50 4-Fluoro 3-nitro aniline
Lauramine
Methyl benzoate, M. cocoate
Methyl isostearate, M. laurate
- Methyl myristate, M. palmitate
Oleic acid
Ricinoleic acid
Tall oil acid
Tallow acid
- Lathering agent**
Ammonium cocoyl sarcosinate
Ammonium C12-15 alkyl sulfate
Ammonium lauroyl sarcosinate
Cocamide MEA ethoxylate
Cocamidopropyl dimethylaminohydroxypropyl
hydrolyzed collagen
Lauroyl sarcosine
Myristoyl sarcosine
Sodium cocoyl sarcosinate
Sodium lauroyl sarcosinate
Sodium methyl cocoyl taurate
Sodium myristoyl sarcosinate
TEA-cocoyl sarcosinate
TEA-lauroyl sarcosinate
- Lubricant**
Aluminum salt octenyl succinate
Amodimethicone
Boron nitride
Calcium aluminum borosilicate/Calcium stearate
Caprylic/capric triglyceride
Coceth-7 carboxylic acid
Coconut (*Cocos nucifera*) oil
Cyclomethicone
Diisododecyl adipate
Diisostearyl fumarate
Dimethicone copolyol
Glycerol isostearate, G. oleate
Glycerol polymethacrylate
Gold of Pleasure oil
Hyaluronic acid
Hydrogenated coconut oil
Hydrogenated cottonseed oil
Hydrogenated palm oil
Hydrogenated soybean/cottonseed oil
Hydrogenated soybean oil
Hydrogenated vegetable oil
Hydrolyzed oat flour
Hydroxypropyl guar
Isodecyl stearate
Isopropyl lanolate
Isostearyl diglycerol succinate
Jojoba esters
Lanolin oil
Laureth-3 phosphate
Magnesium myristate, M. stearate

- Mango (*Mangifera indica*) oil
 Mineral oil (*Paraffinum liquidum*)
 Mink oil
 Monostearyl citrate
 Neatsfoot oil
 Oleostearine
 Partially hydrogenated soybean oil
 PEG-2 stearate
 PEG-4 dilaurate
 PEG-5M
 PEG-9M
 PEG-23M
 PEG-27 lanolin
 PEG-30 lanolin
 PEG-40 lanolin, P. stearate
 PEG-45M
 PEG-90M
 PEG-160M
 PEG/PPG-17/6 copolymer
 Pentaerythrityl tetrapelargonate
 Petrolatum
 Phenethyl dimethicone
 Phenyl methicone
 Polyacrylamidomethylpropane sulfonic acid
 Polybutane
 Polydimethicone copolyol
 Polyglycerol ester of mixed vegetable fatty acids
 Polymethylsilsesquioxane
 Potassium laurate, P. myristate
 Potassium tallowate
 PPG-2 myristyl ether propionate
 PPG-3 myristyl ether
 PPG-9-buteth-12
 PPG-11 stearyl ether
 PPG-12-buteth-16
 PPG-12-PEG-50 lanolin
 PPG-14 butyl ether
 PPG-20 cetyl ether
 PPG-20-buteth-30
 PPG-24-buteth-27
 PPG-28-buteth-35
 PPG-36 oleate
 PPG-40 butyl ether
 Quaternium-79 hydrolyzed keratin
 Quaternium-79 hydrolyzed silk
 Rice (*Oryza sativa*) starch
 Shea butter (*Butyrospermum parkii*) extract
 Shorea stenoptera butter
 Silica
 Stearamide MEA, S. MEA-stearate
 Stearoxymethylsilane
 Stearyl dimethicone
 Triisostearyl citrate
- Triolein
 Trisodium HEDTA
 Triundecanoin
 Zinc laurate, Z. stearate
- Miscellaneous**
Adhesion promoter — Glycerin/diethylene glycol/adipate crosspolymer
Analgesic — Glycol salicylate
Anesthetic — Benzocaine
Anti-elastic — Hydrolyzed Ulva lactuca extract
Anti-itching — Sodium shale oil sulfonate
Antiacid — Magnesium hydroxide, Magnesium silicate, Simethicone
Antifoam — Dimethicone silylate, Simethicone
Antiflaccid — Laminaria saccharina extract
Antipruritic — Coal tar
Antispasmodic — Garlic (*Allium sativum*) extract
Antiwrinkle — Chinese hibiscus (*Hibiscus rosa-sinensis*) extract
Barrier — Glycerin/diethylene glycol/adipate crosspolymer
Cell regeneration — Glycoproteins, Hydrolyzed Ulva lactuca extract
Co-emulsifier — Cholesteryl/beheryl/octyldodecyl lauroyl glutamate, Isododecane
Colloid — Gelatin
Cooling agent — Menthyl PCA, Menthone glycerin acetal
Detoxifier — Clover (*Trifolium pratense*) extract
Dye stabilizer — Uric acid
Filler — Mica
Fragrance stabilizer — 2,2',4,4'-Tetrahydroxybenzophenone
Free radical scavenger — Melanin
IR filter — Corallina officinalis
Lanolin substitute — PEG-80 jojoba acid/alcohol
Lipolytic — Gelidium cartilagineum
Oxidant — Barium peroxide, Hydrogen peroxide, Urea peroxide
Oxygen carrier — Perfluorodecalin
Peroxide stabilizer — Phenacetin, Sodium stannate
Scalp stimulant — Birch (*Betula alba*) leaf extract
Sebostatic — Laminaria saccharina extract
Shine enhancer — Hydrolyzed wheat protein hydroxypropyl polysiloxane
Skin barrier lipid — Ceramide 3, N(27-Stearoyloxy-heptacosanoyl) phytosphingosine
Skin clarifier — Oat (*Avena sativa*) bran extract
Skin purifier — Birch (*Betula alba*) leaf extract

- Substantivity* — Dimethicone copolyol
bishydroxyethylamine, Dimethicone
hydroxypropyl trimonium chloride,
Trimethylsilylamodimethicone
- 5 *Sunless tanning* — Acetyl tyrosine, Eclipta alba
extract in white emulsion
- Tonic* — Kiwi (*Actinidia chinensis*) fruit extract,
Matricaria (*Chamomilla recutita*) extract,
Orange (*Citrus aurantium dulcis*) peel extract
- 10 *Viscosity stabilizer* — Diisodecyl adipate
Spreading agent — Stearyl heptanoate
Wound healing — Comfrey (*Symphytum*
officinale) leaf extract
- 15 *Waterproofing agent* — PVP/eicosene copolymer,
PVP/hexadecene copolymer, Tricontanyl
PVP
- Moisture barrier**
Acrylates/octylarylamide copolymer
- 20 Betaglucon
C16-18 alkyl methicone
Cholesterol
Glycolipids
Isoeicosane
- 25 Isohexadecane
Lanosterol
Octyl pelargonate, O. stearate
Polyisobutene/isohexapentacontahexane
Polyisobutene/isooctahexacontane
- 30 Silica silylate
Trihydroxypalmitamidohydroxy propyl myristyl
ether
Trimethylsiloxy silicate
- 35 **Molsturizer**
Acetamidopropyl trimonium chloride
Adenosine triphosphate
Aesculus chinensis extract
- 40 Algae (*Ascophyllum nodosum*) extract
Algae extract
Aloe barbadensis, A. b. extract
Ammonium lactate
Amniotic fluid
- 45 Apple (*Pyrus malus*) extract
Apricot (*Prunus armeniaca*) kernel oil
Arginine PCA
Atelocollagen
Artemisia apiacea extract
- 50 Astrocyrum murumuru extract
Avocado (*Persea gratissima*) extract, oil
Avocado (*Persea gratissima*) unsaponifiables
Babassu (*Orbignya oleifera*) oil
- Bactri gasipaes extract
Benincasa hispids extract
Betaglucon
Betaine
Borage (*Borago officinalis*) seed oil
Brazil nut (*Bertholettia excelsa*) extract, oil
C10-30 cholesterol/lanosterol esters
Calcium pantothenate
Calcium protein complex
Caprylic/capric triglyceride
Caprylic/capric/lauric triglyceride
Caprylic/capric/linoleic triglyceride
Caprylic/capric/oleic triglycerides
Cashew (*Anacardium occidentale*) nut oil
Celastrus paniculata extract
Ceramide 33 (liquid soy extract)
Chia (*Salvia hispanica*) oil
Chinese hibiscus (*Hibiscus rosa-sinensis*) extract
Chitin
Chitosan, C. PCA
Cholesteric esters
Cholesterol
Cholesteryl/behanyl/octyldodecyl lauroyl
glutamate
Cocodimonium hydroxypropyl hydrolyzed
collagen
Cocodimonium hydroxypropyl hydrolyzed silk
Cocodimonium hydroxypropyl hydrolyzed wheat
protein
Cocodimonium hydroxypropyl silk amino acids
Collagen
Collagen amino acids, C. phthalate
Copper aspartate, C. protein complex
Corn (*Zea mays*) oil
Cottonseed (*Gossypium*) oil
Crataegus cuneata extract
Cucumber (*Cucumis sativus*) extract
Desamido collagen
Dicaprylyl maleate
Diisocetyl dodecanedioate
Diisostearyl adipate
Dimethyl hyaluronate
Dimethylsilanol hyaluronate
Diocetyl dodecyl dimer diinoleate
Diocetyl dodecyl dodecanedioate
Dipentaerythritol fatty acid ester
Dog rose (*Rosa canina*) hips extract
Dog rose (*Rosa canina*) seed extract
Echitea glauca extract
Elastin amino acids
Embolica officinalis extract
Ethyl minkate
Eugenia jambolana extract

	Evening primrose (<i>Oenothera biennis</i>) extract, oil	Lactamide DGA, L. MEA
	Galla sinensis extract	Lactic acid
	Ganoderma lucidum oil	Lactobacillus/whey ferment
	Ginseng (<i>Panax ginseng</i>) extract	Lactococcus hydrolysate
5	Gleditsia sinensis extract	Lactoyl methylsilanol elastinate
	Glycereth-12	Lanolin alcohol
	Glyceryl alginate, G. collagenate	Lauryl PCA
	Glyceryl polymethacrylate	Lecithin
10	Glycolic acid	Lesquerella fendleri oil
	Glycolipids	Liposomes
	Glycosaminoglycans	Lysine PCA
	Glycosphingolipids	Macadamia ternifolia nut oil
	Gnetum amazonicum extract	Magnesium aspartate
	Grape (<i>Vitis vinifera</i>) seed oil	Maltitol
15	Hazel (<i>Corylus avellana</i>) nut oil	Manganese aspartate
	Honey extract	Mango (<i>Mangifera indica</i>) oil
	Hyaluronic acid	Mannan
	Hybrid safflower (<i>Carthamus tinctorius</i>) oil	Marine polyaminosaccharide
	Hydrogenated castor oil	Mauritella armata extract
20	Hydrogenated coconut oil	Maximiliana regia extract
	Hydrogenated cottonseed oil	Meadowfoam (<i>Limnanthes alba</i>) seed oil
	Hydrogenated lecithin	Melaleuca hypericifolia extract
	Hydrogenated palm oil	Methylsilanol elastinate, M. mannuronate
	Hydrogenated polyisobutene	Milk amino acids
25	Hydrogenated soybean oil	Mineral oil (Paraffinum liquidum)
	Hydrogenated soybean/cottonseed oil	Molybdenum aspartate
	Hydrogenated vegetable oil	Mouriri apiranga extract
	Hydrolyzed carbolipoprotein	Natto gum
	Hydrolyzed collagen	Nelumbium speciosum extract
30	Hydrolyzed elastin	Neopentyl glycol dicaprate
	Hydrolyzed fibronectin	Oat (<i>Avena sativa</i>) protein
	Hydrolyzed glycosaminoglycans	Octyl hydroxystearate
	hydrolyzed keratin	Ophiopogon japonicus extract
	Hydrolyzed milk protein	Orange (<i>Citrus aurantium dulcis</i>) peel wax
35	Hydrolyzed oats	Palmetto extract
	Hydrolyzed pea protein	Pantethine
	Hydrolyzed placental protein	Panthenyl ethyl ether
	Hydrolyzed rice protein	Paraffin
	Hydrolyzed transgenic collagen	Partially hydrogenated soybean oil
40	Hydrolyzed serum protein	peanut (<i>Arachis hypogaea</i>) oil
	Hydrolyzed silk	Pecan (<i>Carya illinoensis</i>) oil
	Hydrolyzed sweet almond protein	PEG-4, -6, -8, -12
	Hydrolyzed wheat protein	PEG-70 mango glycerides
	Hydroxyethyl chitosan	PEG-75 shea butter glycerides
45	Inositol	PEG-75 shorea butter glycerides
	Isodecyl salicylate	PEG-100 stearate
	Isostearyl hydrolyzed animal protein	Pentaerythrityl
	Jajoba (<i>Buxus chinensis</i>) oil	isostearate/caprate/caprylate/adipate
	Jajoba esters	Pentaerythrityl stearate/caprate/caprylate/adipate
50	Keratin amino acids	Pentylene glycol
	Kiwi (<i>Actinidia chinensis</i>) fruit extract	Perfluoropolyethylisopropyl ether
	Kola (<i>Cola acuminata</i>) extract	Petrolatum
	Kukui (<i>Aleurites molaccana</i>) nut oil	Petroleum wax

- Pfaffia spp. extract
 Pistachio (*Pistacia vera*) nut oil
 Placental protein
 Plankton extract
 5 Polyamino sugar condensate
 Polybutene
 Polyunsaturated fatty acids
 Potassium DNA, P. lactate, P. PCA
 PPG-8/SMDI copolymer
 10 PPG-20 methyl glucose ether distearate
 Propylene glycol dicaprylate/dicaprate
 Propylene glycol dioctanoate
 Pumpkin (*Cucurbita pepo*) seed oil
 Quinoa (*Chenopodium quinoa*) extract
 15 Rapeseed (*Brassica campestris*) oil
 Rehmannia chinensis extract
 Rice (*Oryza sativa*) bran oil
 Rose Water
 Royal jelly extract
 20 Saccharide isomerate
 Saccharomyces lysate extract
 Saccharomyces/soy protein ferment
 Safflower (*Carthamus tinctorius*) oil
 Selenium aspartate, S. protein complex
 25 Sericin
 Serum albumin
 Sesame (*Sesamum indicum*) oil
 Shea butter (*Butyrospermum parkii*)
 Shea butter (*Butyrospermum parkii*) extract
 30 Shorea stenoptera butter
 Silk amino acids
 Sodium carboxymethyl beta-glucan
 Sodium chondroitin sulfate
 Sodium DNA, S. hyaluronate
 35 Sodium lactate, S. PCA
 Souble collagen
 Souble transgenic elastin
 Soybean (*Glycine soja*) oil
 Spherical cellulose acetate
 40 Spondias amara extract
 Squalene
 Stomach extract
 Sunflower (*Helianthus annuus*) seed oil
 Superoxide dismutase
 45 Tissue extract
 Tocopheryl acetate, T. linoleate
 Tomato (*Solanum lycopersicum*) extract
 Tormentil (*Potentilla erecta*) extract
 Trehalose
 50 Triundecanoin
 Vegetable oil
 Walnut (*Juglans regia*) oil
 Watercress (*Nasturtium officinale*) extract
 Wheat (*Triticum vulgare*) germ extract, germ oil
 Yarrow (*Achillea millefolium*) extract
 Wheat amino acids
 Yeast (*Saccharomyces cerevisiae*) extract (Faex)
 Yogurt filtrate
 Zinc aspartate
 Ziziphus jujuba extract

Naturilizer
 2-Aminobutanol
 Aminoethyl propanediol
 Aminomethyl propanediol
 Aminomethyl propanol
 Ammonium carbonate
 Calcium hydroxide
 Diethanolamine
 Ethanolamine
 Glucamine
 Isopropanolamine
 Isopropylamine
 2-Methyl-4-hydroxypyrrolidine
 Morpholine
 Sodium bromate
 Succinic acid
 Tetrahydroxypropyl ethylenediamine
 Triethanolamine
 Tromethamine

Oil absorbent
 Hydrated silica
 Polymethyl methacrylate
 Silicon dioxide hydrate
 Walnut (*Juglans regia*) shell powder

Ointment base
 Borage (*Borago officinalis*) seed oil
 Caprylic/capric/stearic triglyceride
 Glyceryl cocoate
 Hydrogenated coco-glycerides
 Lanolin
 Mink oil
 Oleostearine
 Tallow

Opacifier
 Barium sulfate
 C12-16 alcohols
 Cetearyl octanoate
 Cetyl myristate, C. palmitate
 Cocamidopropyl lauryl ether
 Glyceryl distearate
 Glyceryl hydroxystearate
 Glyceryl myristate, G. stearate

- | | |
|---|---|
| <p>5 Glycol distearate, G. stearate
Magnesium myristate
PEG-2 distearate, P. stearate
PEG-2 stearate SE
PEG-3 distearate
Propylene glycol myristate, P.g. stearate
Stearamide
Stearamide DIBA-stearate
Stearamide MEA
10 Stearamide MEA-stearate
Stearamidopropyl dimethylamine lactate
Stearyl stearate
Styrene homopolymer
Styrene/acrylates copolymer
15 Styrene/PVP copolymer
Triisostearin PEG-6 esters</p> <p>Plasticizer
Acetyl tributyl citrate
20 Acetyl triethyl citrate
AMP-isostearyl hydrolyzed wheat protein
AMPD-isostearyl hydrolyzed collagen
Cyclohexane dimethanol dibenzoate
Dibutyl phthalate
25 Diethyl phthalate
Diethylene glycol dibenzoate
Diisopropyl sebacate
Dimethicone copolyol
Dimethyl phthalate
30 Dipropylene glycol dibenzoate
Ethyl ester of hydrolyzed keratin
Glycerol tribenzoate
Glycol
Hydrolyzed serum protein
35 Isocetyl salicylate
Isodecyl benzoate
Isocicosane
Isopropyl lanolate
Isostearyl hydrolyzed collagen
40 Lauroyl hydrolyzed collagen
Marine collagen
Monostearyl citrate
Neopentyl glycol dibenzoate
Octyl benzoate, O. laurate
45 PEG-60 shea butter glycerides
Pentaerythrityl tetrabenzoate
Polyoxyethylene glycol dibenzoate
Polypropylene glycol dibenzoate
PPG-12-PEG-50 lanolin
50 PPG-20 cetyl ether
PPG-20 lanolin alcohol ether
Propylene glycol dibenzoate
Propylene glycol myristyl ether acetate</p> | <p>Rice (Oryza sativa) bran wax
Serum protein
Tosylamide/epoxy resin
Triacetin
Tributyl citrate
Triethyl citrate
Trimethyl pentanediol dibenzoate
Trimethylethanetribenzoate</p> <p>Polish
Acrylates copolymer
Aluminum silicate
Neatsfoot oil
Tallow</p> <p>Polymer
Acrylamide sodium acrylate copolymer
Acrylates-VA crosspolymer
Acrylates/acrylamide copolymer
Acrylates/hydroxyesters acrylates copolymer
Acrylates/octylacrylamide copolymer
Acrylates/steareth-20 methacrylate copolymer
Adipic acid-epoxypropyl diethylenetriamine
copolymer
Adipic acid/dimethylaminohydroxypropyl
diethylene triamine copolymer
Ammonium acrylates copolymer
Ammonium acrylates/acrylonitril copolymer
AMP-acrylates copolymer
AMP-isostearyl hydrolyzed collagen
Butylester of PVM-MA copolymer
Calcium carrageenan
Carboxylated vinylacetate terpolymer
Ceteareth-2 phosphate
Ceteareth-5 phosphate
Ceteareth-10 phosphate
Ceteareth-29, -34
Coco-glucoside
Cocodimonium hydroxypropyloxyethyl cellulose
C12-13 pareth-4, -9, -23
DEA-ceteareth-2-phosphate
DEA-oleth-5-phosphate
DEA-oleth-20-phosphate
Diglycol/CHDM/isophthalates/SIP copolymer
Diisopropyl dimer diinoleate
Diisostearyl trimethylolpropane siloxy silicate
Diisostearyl dimer diinoleate
Dilinoleic acid
Dodecanedioic acid/cetearyl alcohol/glycol
copolymer
Eclipta alba extract
Ethyl ester of PVM/MA copolymer
Ethylene/acrylic acid copolymer</p> |
|---|---|

- Ethylene/VA copolymer
 Glyceth-26 phosphate
 Hyaluronic acid
 Hydrolyzed RNA
 5 Hydrolyzed wheat protein polysiloxane polymer
 Hydroxypropyltrimonium hydrolyzed collagen
 Hydroxypropyltrimonium hydrolyzed wheat protein
 Laneth-40
 10 Lauryldimonium hydroxypropyl hydrolyzed soy protein
 Methacryloyl ethyl betaine/acrylates copolymer
 Octylacrylamide/acrylates/butylaminoethyl methacrylate copolymer
 15 Oleth-2 phosphate
 Oleth-5 phosphate
 PEG-3 lanolate
 PEG-4 stearate
 PEG-5M
 20 PEG-7 glyceryl cocoate
 PEG-8 glyceryl laurate
 PEG-8/SMDI copolymer
 PEG-9 castor oil
 PEG-9M
 25 PEG-11 babassu glycerides
 PEG-12 palm kernel glycerides
 PEG-12 stearate
 PEG-14 avocado glycerides
 PEG-15 glyceryl laurate
 30 PEG-20 corn glycerides
 PEG-20 evening primrose glycerides
 PEG-20 glyceryl oleate
 PEG-23 oleate
 PEG-23M
 35 PEG-29 castor oil
 PEG-42 babassu glycerides
 PEG-45 safflower glycerides
 PEG-45M
 PEG-60 evening primrose glycerides
 40 PEG-60 hydrogenated castor oil
 PEG-75 castor oil
 PEG-90M
 PEG-120 distearate
 PEG-150 lanolin
 45 PEG-160M
 PG-hydroxycellulose lauryldimonium chloride
 PG-hydroxyethylcellulose cocodimonium chloride
 PG-hydroxyethylcellulose stearyldimonium chloride
 50 Polyethylene, ionomer
 Polyethylene, micronized
 Polyethylene, oxidized
- Polyglyceryl-2 polyhydroxystearate
 Polymethacrylamidopropyltrimonium chloride
 Polyquaternium-6, -7, -10, -11, -22, -39
 Polysilicone-8
 Potassium alginate
 Potassium lauroyl collagen amino acids
 Potassium lauroyl hydrolyzed soy protein
 Potassium lauroyl wheat amino acids
 PPG-8/SMDI copolymer
 PPG-12/SMDI copolymer
 PPG-51/SMDI copolymer
 PVM/MA decadiene crosspolymer
 PVP/dimethylaminoethylmethacrylate copolymer
 PVP/VA copolymer
 Sodium cocoyl hydrolyzed wheat protein
 Steardimonium hydroxypropyl hydrolyzed wheat protein
 Steareth-2 phosphate
 TEA-acrylates/acrylonitrilgens copolymer
 Tosylamide/epoxy resin
 Tosylamide/formaldehyde resin
 Trideceth-5, -6, -7, -8
 VA/butyl maleate/isobornyl acrylate copolymer
 VA/crotonates/vinyl neodecanate copolymer
 Vinyl caprolactam/PVP/
 dimethylaminoethylmethacrylate copolymer
 Wheat (Triticum vulgare) protein
 Xanthan gum
- Powder**
 Acrylates copolymer, spherical powder
 Attapulgit
 Boron nitride
 Calcium aluminum borosilicate
 Calcium carbonate
 Cellulose triacetate
 Corn (Zea mays) cob powder, starch
 Hydrogenated jojoba wax
 Magnesium carbonate, M. myristate
 Magnesium stearate
 Mica
 Microcrystalline cellulose
 Nylon-6
 Nylon powder
 Oat (Avena sativa) starch
 Polyamide 12
 Polyethylene
 Polymethyl methacrylate
 Polymethylsilsesquioxane
 PTFE
 Silica
 Silk powder
 Spherical cellulose acetate

	Talc	Methyl paraben sodium
	Tapioca dextrin	Methylchloroisothiazolinone
	Zinc laurate	Methylidibromo glutaronitrile
		Methylisothiazolinone
5	<u>Powder, absorbent</u>	Methylparaben
	Aluminum starch octenylsuccinate	Mushroom (<i>Cordyceps saboifera</i>) extract
	Clays (white, yellow, red, green, pink)	Myrrimonium bromide
	Sorbitol	Pentasodium pentetate
	Tapioca	Pentetic acid
10	<u>Preservative</u>	Phenethyl alcohol
	Alcohol	Phenol
	Ascorbic acid	Phenyl mercuric acetate
	Ascorbyl palmitate	o-Phenylphenol
15	Benzalkonium chloride	Polyaminopropyl biguanide
	Benzethonium chloride	Polymethoxy bicyclic oxazolidine
	Benzoic acid	Potassium sorbate
	Benzyl alcohol	Propylparaben
	Benzylparaben	Quaternium-15
20	5-Bromo-5 nitro-1,3-dioxane	Salicylic acid
	2-Bromo-2-nitropropane-1,2-diol	Sodium benzoate, S. bisulfate
	Butylparaben	Sodium butylparaben, S. dehydroacetate
	Calcium propionate	Sodium erythorbate, S. ethyl paraben
	Cetrimonium bromide	Sodium hydroxymethylglycinate
25	Cetyl pyridinium chloride	Sodium metabisulfite, S. methylparaben
	Chloroxylenol	Sodium o-phenylphenate
	Chlorphenesin	Sodium propionate, S. propylparaben
	o-Cymen-5-ol	Sodium pyrrithione, S. salicylate
	Diazolindinyl urea	Sodium sulfite
30	Dichlorobenzyl alcohol	Sorbic acid
	Dichlorophene	Tetrasodium EDTA
	Diiodomethyltolylsulfone	Thimerosal
	Dimethyl hydroxymethyl pyrazole	Thymol
	Dimethyl oxazolidine	Tris (hydroxymethyl) nitromethane
35	Disodium EDTA	Trisodium EDTA, T. HEDTA
	DMDM hydantoin	Usnic acid
	EDTA	Zinc PCA
	Erythorbic acid	<u>Propellant</u>
	7-Ethylbicyclooxazolidine	Butane
40	Ethylparaben	Dimethyl ether
	Fomistopsis officinalis oil	Hydrofluorocarbon 152a
	Formaldehyde	Isobutane
	Glutaral	Propane
	Glyceryl laurate	<u>Protein</u>
45	HEDTA	Albumen
	Hexamidine diisethionate	Atelocollagen
	Hexetidine	Bletia hyacinthina extract
	Imidazolidinyl urea	Chrysanthemum morifolium extract
	Isobutylparaben	Cocodimonium hydroxypropyl hydrolyzed
50	Isopropyl sorbate	collagen
	Isopropylparaben	Cocodimonium hydroxypropyl hydrolyzed
	MDM hydantoin	keratin
	Methanmonium chloride	

	Cocodimonium hydroxypropyl hydrolyzed soy protein	Sodium stearoyl hydrolyzed collagen
	Cocodimonium hydroxypropyl hydrolyzed wheat protein	Sodium undecylenoyl hydrolyzed collagen
5	Cocoyl hydrolyzed collagen	Sodium/TEA-lauroyl hydrolyzed collagen
	Collagen, C. phthalate	Sodium/TEA-lauroyl hydrolyzed keratin
	Collagen amino-polysiloxane hydrolyzate	Soluble collagen
	Deoxyribonucleic acid	Soluble keratin
	Desamido collagen	Soluble wheat protein
10	Elastin amino acids	Soy (Glycine soja) protein
	Embryo extract	Steartrimonium hydroxypropyl hydrolyzed collagen
	Ethyl ester of hydrolyzed animal protein	Steartrimonium hydroxyethyl hydrolyzed collagen
	Fibronectin	TEA-cocoyl hydrolyzed collagen
	Gelatin	TEA-cocoyl hydrolyzed soy protein
15	Human placental protein	TEA-lauroyl collagen amino acids
	Hydrolyzed collagen	TEA-lauroyl keratin amino acids
	Hydrolyzed extensin	Trachea hydrolysate
	Hydrolyzed fish protein	Triethonium hydrolyzed collagen ethosulfate
	Hydrolyzed hemoglobin	Wheat (Triticum vulgare) germ extract, protein
20	Hydrolyzed keratin	Wheat amino acids
	Hydrolyzed lactalbumin	Wheat peptide
	Hydrolyzed milk protein	Wheat protein
	Hydrolyzed soy flour	
	Hydrolyzed sweet almond protein	<u>Protein, hydrolyzed</u>
25	Hydroxypropyltrimonium hydrolyzed collagen	Ethyl ester of hydrolyzed silk
	Isostearyl hydrolyzed collagen	Hydrolyzed casein
	Keratin	Hydrolyzed elastin
	Lactoferrin	Hydrolyzed mushroom (Tricholoma matsutake) extract
	Lactoglobulin	
30	Lauryldimonium hydroxypropyl hydrolyzed collagen	Hydrolyzed pea protein
	Marine collagen	hydrolyzed rice protein
	Methylsilanol elastinate	Hydrolyzed serum protein
	Potassium abietoyl hydrolyzed collagen	Hydrolyzed silk
35	Potassium cocoyl hydrolyzed collagen	Hydrolyzed soy protein
	Potassium myristoyl hydrolyzed collagen	Hydrolyzed vegetable protein
	Potassium oleoyl hydrolyzed collagen	Hydrolyzed wheat protein
	Potassium undecylenoyl hydrolyzed collagen	Hydroxypropyltrimonium hydrolyzed casein
	Propyltrimonium hydrolyzed collagen	Hydroxypropyltrimonium hydrolyzed silk
40	Propyltrimonium hydrolyzed soy protein	Hydroxypropyltrimonium hydrolyzed soy protein
	Propyltrimonium hydrolyzed wheat protein	Hydroxypropyltrimonium hydrolyzed wheat protein
	Protein hydrolysates	
	Quaternium-79 hydrolyzed keratin	<u>Reducing agent</u>
	Quaternium-79 hydrolyzed silk	Dimyristyl thiodipropionate
45	Rice peptide	Hydrolyzed zein, iodized
	RNA	Hydrolyzed zein, sulfurized
	Serum albumin, S. protein	Zinc formaldehyde sulfoxylate
	Silk powder	
	Sodium caseinate	<u>Refatting agent</u>
50	Sodium cocoyl hydrolyzed collagen	Caprylic/capric triglyceride PEG-4 esters
	Sodium cocoyl hydrolyzed soy protein	Cocamide MIPA
	Sodium myristoyl hydrolyzed collagen	Diisostearyl dimer diinoleate
	Sodium oleoyl hydrolyzed collagen	Hydrogenated palm kernel glycerides

- Isostearyl erucate, I. isostearate
 Lecithin
 Liposómes
 Magnesium sulfate hepta-hydrate
 5 Octyldodecyl behenate, O. myristate
 bis-Octyldodecyl stearyl dimer dilinoleate
 Octyldodecyl stearyl stearate
 Octyl hydroxystearate
 10 PEG-3 stearate
 PEG-4 oleamide
 PEG-6 capric/caprylic glycerides
 PEG-7 glyceryl cocoate
 PEG-16
 15 Propylene glycol dipelargonate
- Resin**
 Acrylates/hydroxyesters acrylates copolymer
 Ethylene vinyl acetate
 Glyceryl abietate
 20 Methacryloyl ethyl betaine/acrylates copolymer
 4-Methyl benzenesulfonamide
 Polypropylene
 Polyquaternium-16, -44
 Sucrose benzoate
- 25 **Sequestrant**
 Calcium acetate, C. phosphate, C. sulfate
 Encapsulation and entrapment systems
 Pentasodium triphosphate
 30 Phosphoric acid
 Potassium phosphate, P. sodium tartrate
 Silicon dioxide hydrate
 Sodium citrate, S. gluconate
 Sorbitol
 35 Tartaric acid
 Tripotassium EDTA
 Trisodium NTA
- Silicone**
 40 Amino bispropyl dimethicone
 Ammonium dimethicone copoly sulfate
 Amodimethicone
 Behenoxy dimethicone
 C16-18 alkyl methicone
 45 Cetyl dimethicone copolyol
 Cyclomethicone
 Diisodecyl adipate
 Diisostearyl trimethylolpropane siloxy silicate
 Dimethicone
 50 Dimethicone copolyol
 Dimethicone copolyol almondate
 Dimethicone copolyol isostearate
 Dimethicone copolyol olivate, D.c. phthalate
- Dimethicone copolyolamine
 Dimethiconol fluoroalcohol dilinoleic acid
 Dimethiconol hydroxystearate, D. stearate
 Diphenyl dimethicone
 Disodium-PG-propyldimethicone thiosulfate
 Isopropyl hydroxybutyramide dimethicone
 copolyol
 Methicone
 Octamethyl cyclotetrasiloxane
 Phenyl methicone, P. trimethicone
 Polyether Trisiloxane
 Polymethylsilsequioxane
 Polysilicone-8
 Quaternium-80
 Silicone quaternium-1, -8
 Sodium-PG-propyl thiosulfate dimethicone
 Stearoxymethicone/dimethicone copolymer
 Trimethylsilylamodimethicone
- Skin calming agent**
 Cornflower (Centaurea cyanus) extract
 Fennel (Foeniculum vulgare) extract
 Fenugreek extract
 Linden (Tilia cordata) extract
 Valerian (Valeriana officinalis) extract
- Skin cleanser**
 Dog rose (Rosa canina) hips extract
 Papaya (Carica papaya) extract
 Peach (Prunus persica) extract
 Rose (Rosa multiflora) extract
 Willow (Salix alba) extract
- Skin conditioner**
 Artemisia apiacea extract
 Astrocaryum tucuma extract
 Bactris gasipaes extract
 Biotin
 Bishydroxyethyl biscetyl malonamide
 Bletia hyacinthina extract
 Borage (Borago officinalis) seed oil
 Borageamidopropyl phosphatidyl PG-dimonium
 chloride
 Carbocysteine
 Catalpa kaempfera extract
 Coco phosphatidyl PG-dimonium chloride
 Cocodimonium hydroxypropyl hydrolyzed
 keratin
 Collagen amino acids
 Cyclomethicone
 Dimethicone, D. copolyol acetate
 Emblica officinalis extract
 Equisetum arvense extract

- Ethyl ester of hydrolyzed animal protein
 Evening primrose (*Oenothera biennis*) oil
 Fomes *tomarius* extract
 Fomistopsis officinalis oil
 5 Gelatin
 Ginseng hydroxypropyltrimonium chloride
 butylene glycol
 Glycolipids
 Glycosphingolipids
 10 Gnetum amazonicum extract
 Honey (Mel)
 Hydrolyzed carbolipoprotein
 Hydrolyzed elastin
 Hydrolyzed pea protein
 15 Hydrolyzed rice protein
 Hydrolyzed serum protein
 Hydrolyzed silk
 Hydrolyzed soy protein
 Hydrolyzed vegetable protein
 20 Hydrolyzed wheat protein
 Inga edulis extract
 Kiwi (*Actinidia chinensis*) fruit extract
 Laminaria japonica extract
 Lecithin
 25 Marsilea minuta extract
 Nettle (*Urtica dioica*) extract
 Palmitamidodecanediol
 Pearls (*Margarita margarita*)
 PEG-42 Eblirico ceramides extract
 30 Phenyl trimethicone
 Phytantriol
 Polygonum multiflorum extract

 35 Potassium cocoyl hydrolyzed collagen
 Retinyl palmitate polypeptide
 Salvia miltiorrhiza extract
 Silt
 Sodium cocoyl hydrolyzed collagen
 40 Soluble transgenic elastin
 Steartrimonium hydroxyethyl hydrolyzed
 collagen
 Stearyl methicone
 45 **Skin healing**
 Calendula officinalis extract
 Glycoproteins
 Hydrocortyl (*Centella asiatica*) extract
 Oat (*Avena sativa*) extract
 50 Sandalwood (*Santalum album*) extract
 Spearmint (*Mentha viridis*) extract

Skin lightening/whitening agent
- Ascorbic acid polypeptide
 Bearberry (*Arctostaphylos uva-ursi*) extract
 Hydroquinone-beta-D-glucopyranoside
 Lemon (*Citrus medica limonum*) peel extract
 Pearls (*Margarita margarita*)

Skin protectant
 Acetylmethionyl methylsilanol elastinate
 Allantoin, A. aluminum hydroxide
 Aloe barbadensis, A.b. extract
 Aluminum starch octenylsuccinate
 Anise (*Pimpinella anisum*) extract
 Arnica montana extract
 Artemisia apiacea extract
 Ascorbyl methylsilanol pectinate
 Astrocaryum tucuma extract
 Bactris gasipaes extract
 Betaglucon
 Bishydroxyethyl biscetyl malonamide
 Bletia hyacinthina extract
 C18-70 Isoparaffin
 Calendula amurensis extract
 Carboxymethyl chitin
 Carcinia cambogia extract
 Carrot (*Daucus carota*) extract
 Carrot (*Daucus carota sativa*) oil
 Catalpa kaempferia extract
 Chenopodium album extract
 Chitosan
 Chrysanthemum morifolium extract
 Collagen
 Corn poppy (*Papaver rhoeas*) extract
 Crataegus cuneata extract
 Crataegus monogyna extract
 Cypress (*Cupressus sempervirens*) extract
 Dimethicone
 Dimethiconol fluoroalcohol diinoleic acid
 Dimethiconol hydroxystearate, D. searate
 Dimethylsilanol hyaluronate
 Echitea glauca extract
 Embryo extract
 Entada phaseoloides extract
 Equisetum arvense extract
 Euphorium fortunei extract
 Euterpe precatoria extract
 Fenugreek extract
 fomistopsis officinalis oil, F. pinicola extract
 Galla sinensis extract
 Gentian (*Gentiana lutea*) extract
 Gleditsia sinensis extract
 Glyceryl ricinoleate
 Glycolipids
 Hierochloa odorata extract

- Hyaluronic acid
 Hydrogenated lecithin
 Hydrolyzed lupine protein
 Hydrolyzed milk protein
 5 Hydrolyzed mushroom (*Tricholoma matsutake*)
 extract

 Isodecyl salicylate
 10 Jojoba (*Buxus chinensis*) oil
 Lady's Thistle (*Silybum marianum*) extract
 Laminaria japonica extract
 Ligusticum jeholense extract
 Liposomes
 Magnolis spp. extract
 15 Mango kernel oil
 marsilea minuta extract
 Melaleuca hypericifolia extract
 Melaleuca uncinata extract
 Melaleuca wilsonii extract
 20 Methylsilanol tri PEG-8 glyceryl cocoate
 Oat (*Avena stiva*) meal
 Oyster (*Ostrea*) shell extract
 Palmitamidodecanediol
 Pearls (*Margarita margarita*)
 25 Pentahydrosqualene
 Perfluorodecalin
 Perfluoropolyethylisopropyl ether
 Petrolatum
 PEG-8/SMDI copolymer
 30 PEG-42 Ebiriko ceramides extract
 Pfaffia spp. extract
 Phospholipids
 Plankton extract
 Polygonum multiflorum extract
 35 Pongamol
 PPG-12/SMDI Copolymer
 PPG-51/SMDI Copolymer
 Propyltrimonium hydrolyzed collagen
 Quinoa (*Chenopodium quinoa*) extract, oil
 40 Salvia miltiorrhiza extract
 Sambucus nigra extract
 Shark liver oil
 Shorea robusta extract
 Sodium chondroitin sulfate
 45 Soluble transgenic elastin
 Steartrimonium hydroxyethyl hydrolyzed
 collagen
 Sterculia platanifolia extract
 Superoxide dismutase
 50 Trachea hydrolysate
 Wheat (*Triticum vulgare*) germ extract, protein
 White nettle (*Lamium album*) extract
 Withania somniferum extract
 Xanthoxylum bungeanum extract
 Zinc oxide

Skin smoothing agent
 Althea officinalis extract
 Coltsfoot (*Tussilago farfara*) leaf extract
 Comfrey (*Symphytum officinale*) leaf extract
 Plantain (*Plantago major*) extract
 Sericin

Skin softening
 Clays (white, yellow, red, green, pink)
 Cucumber (*Cucumis sativus*) extract
 Kelp (*Macrocystis pyrifera*) extract
 Peach (*Prunus perisca*) extract
 Phenethyl dimethicone

Skin soothing
 Calendula officinalis extract
 Cherry bark extract
 Cucumber (*Cucumis sativus*) extract
 Garlic (*Allium sativum*) extract
 Hyssop (*Hyssopus officinalis*) extract
 Jasmine (*Jasminum officinale*) extract
 Kelp (*Macrocystis pyrifera*) extract
 Mango kernel oil
 Meadowsweet (*Spiraea ulmaria*) extract
 Quince (*Pyrus cydonia*) seed extract
 Slippery elm extract
 Valerian (*Valeriana officinalis*) extract
 Willow (*Salix alba*) extract
 Witch hazel (*Hamamelis virginiana*) extract

Solubilizer
 Acetyl monoethanolamine
 Almond oil PEG-6 esters
 2-Aminobutanol
 Aminoethyl propanediol
 Aminoethyl propanediol, A. propanol
 Apricot kernel oil PEG-6 esters
 Benzalkonium chloride
 Butoxydiglycol
 Butyl glucoside
 Butylene glycol
 Butyloctanol
 Capric-caprylic mono-diglyceride
 Capryl caprylglycoside
 Caprylic/capric triglyceride
 Caprylic/capric/linoleic triglyceride
 Caprylic/capric/oleic triglycerides
 Caprylyl/capryl glucoside
 Ceteareth-20

	Ceteth-10	PEG-40 hydrogenated castor oil PCA isostearate
	Cetyl PPG-2 isodeceth-7 carboxylate	PEG-40 sorbitan diisostearate
	Cholesterol	PEG-45 palm kernel glycerides
	Corn oil PEG-6 esters	PEG-48 hydrogenated castor oil
5	Decaglycerol monodiolate	PEG-50 castor oil
	Diethanolamine	PEG-50 hydrogenated castor oil
	Dilaureth-10 phosphate	PEG-60 almond glycerides
	Dimethyl octylenediol	PEG-60 castor oil
	Dioleth-8 phosphate	PEG-60 corn glycerides
10	Glycereth-7 -26	PEG-60 glyceryl isostearate, P.g. stearate
	Glyceryl caprylate, G. dilaurate	PEG-60 hydrogenated castor oil
	Glyceryl caprylate/caprate	PEG-60 lanolin
	Isoicosane	PEG-70 mango glycerides
	Isopropanolamine	PEG-75 lanolin
15	Isosteareth-20	PEG-75 shea butter glycerides
	Laneth-5, -15	PEG-75 shorea butter glycerides
	Laureth-23	PEG-80 hydrogenated castor oil
	Methylated cyclodextrin	PEG-80 jojoba acid/alcohol
	Myreth-3	PEG-80 sorbitan laurate
20	Myreth-3-octanoate	PEG-100 castor oil
	Nonoxynol-10, -12, -14, -40, -50	PEG-100 hydrogenated castor oil
	Octoxynol-11, -40	PEG-120 jojoba acid/alcohol
	Oleoamphohydroxypropylsulfonate	PEG-200 trihydroxystearin
	Oleth-3, -5, -10, -15, -20, -25, -50	Poloxamer 407
25	Oleth-20 phosphate	Polyglyceryl-3 oleate
	PEG-4, -6, -8, -12, -16, -20, -32, -40	Polyglyceryl-6 dioleate
	PEG-4 dilaurate	Polyglyceryl-10 decaoleate, P. tetraoleate
	PEG-6 capric/caprylic glycerides	Polysorbate 20, 60, 80
	PEG-6 methyl ether	PPG-2-isodeceth-4, -6, -9, -12
30	PEG-8 distearate	PPG-3 isosteareth-9
	PEG-12 laurate	PPG-3 isoceteth-20 acetate
	PEG-15 castor oil	PPG-5-ceteth-10 phosphate
	PEG-18 stearate	PPG-5-ceteth-20
	PEG-20 glyceryl isostearate, P.g. laurate	PPG-6-decyltetradeceth-12, -20, -30
35	PEG-20 glyceryl oleate, P.g. stearate	PPG-12-PEG-65 lanolin oil
	PEG-20 methyl glucose sesquisteate	PPG-15 stearyl ether
	PEG-20 sorbitan isostearate	PPG-18 butyl ether
	PEG-20 sorbitan triisostearate	PPG-24 butyl ether
	PEG-24 hydrogenated lanolin	PPG-26-buteth-26
40	PEG-25 castor oil	PPG-33 butyl ether
	PEG-25 hydrogenated castor oil	PPG-33-buteth-45
	PEG-30 castor oil	PPG-40-PEG-60 lanolin oil
	PEG-30 glyceryl cocoate	PPG-50 cetyl ether
	PEG-30 glyceryl isostearate	Propylene glycol dicaprylate,
45	PEG-30 glyceryl laurate	dicaprylate/dicaprate
	PEG-30 glyceryl oleate	Ricinoleamide DEA
	PEG-30 glyceryl stearate	Ricinoleth-40
	PEG-33 castor oil	Sodium alpha olefin sulfonate
	PEG-35 castor oil	Sodium lauryl sulfate
50	PEG-36 castor oil	Sodium methylnaphthalenesulfonate
	PEG-40 castor oil	Triethanolamine
	PEG-40 glyceryl laurate, P.g. stearate	Trioctanoin
	PEG-40 hydrogenated castor oil	Tromethamine

	Solvent	Morpholine
	Acetic acid	Octyl benzoate, O. isononanoate
	Acetone	Octyl laurate, O. palmitate
5	Alcohol, A. denat	Octyldodecyl lactate
	Benzophenone	Olive oil PEG-6 esters
	Butoxydiglycol	Peanut oil PEG-6 esters
	Butyl acetate	Pentane
	n-Butyl alcohol	Petroleum distillates
10	Butyl myristate, B. stearate	PEG-6 methyl ether
	Butylene glycol	PEG-12
	C9-11 isoparaffin	PEG-20 hydrogenated castor oil
	C10-11 isoparaffin	PEG-33 castor oil
	C10-13 isoparaffin	PEG-50 glyceryl cocoate
	Caprylic alcohol	Polyglyceryl-2 dioleate
15	Castor (Ricinus communis) oil	Polyglyceryl-3 diisostearate
	Cetearyl octanoate	Polyoxyethylene glycol dibenzoate
	Cetyl stearyl octanoate	Polypropylene glycol dibenzoate
	Chlorobutanol	PPG-2 myristyl ether propionate
	Decyl alcohol	PPG-3
20	Diethylene glycol	PPG-20 lanolin alcohol ether
	Diethylene glycol dibenzoate	Propyl alcohol
	Diethyl sebacate	Propylene carbonate
	Diisocetyl adipate	Propylene glycol
25	Diisopropyl adipate, D. sebacate	Propylene glycol dibenzoate
	Dimethyl phthalate	Propylene glycol methyl ether
	Dipropylene glycol	Propylene glycol myristate
	Dipropylene glycol dibenzoate	Pyridine
	Ethoxydiglycol	Sesame (Sesamum indicum) oil
	Ethyl acetate, E. lactate	Stearyl heptanoate
30	Ethyl myristate, E. oleate	Toluene
	2-Ethylhexyl isostearate	Xylene
	Glycerin	
	Glycofurol	SPF booster
35	Heptane	Borjoa sorbilis extract
	Hexyl alcohol	Isohexadecyl salicylate
	Hexylene glycol	Styrene/acrylates copolymer
	Isobutyl stearate	Titanium dioxide
	Isocetyl salicylate	Yeast (Saccharomyces cerevisiae) extract (Faex)
	Isodecyl benzoate, I. isononanoate	
40	Isodecyl octanoate, I. oleate	Stabilizer
	Isododecane	Acrylates-VA crosspolymer
	Isoeicosane	Acrylates/ceteth-20 methacrylates copolymer
	Isohexadecane	Acrylates/steareth-20 methacrylate copolymer
	Isopropyl alcohol, I. myristate	Acrylates/vinyl isodecanoate crosspolymer
45	Isostearyl stearyl stearate	Alkyldimethylamine oxide
	Laureth-2 acetate	C10 polycarbamyl polyglycol ester
	Methoxydiglycol	Calcium alginate
	Methoxyisopropanol	Cocamidopropyl dimethylamine lactate
	Methyl alcohol	Cocamine oxide
50	Methyl propanediol	Colloidal silica sols
	Methylene chloride	Cyclodextrin
	MEK	Disodium EDTA
	MIBK	Gellan gum

- Glyceryl diisostearate, G. stearate SE
 Glyceryl mono-di-tri-caprylate
 Hydrogenated coco-glycerides
 Hydrogenated C12-18 triglycerides
 Hydrogenated tallow glycerides
 Hydrolyzed oat flour
 Hydroxyoctacosanyl hydroxystearate
 Karaya (*Sterculia urens*) gum
 Laureth-3
 Maltitol
 Methylated cyclodextrin
 Oleamide
 PEG-40 stearate
 PEG-40/dodecyl glycol copolymer
 Perfluoropolyethylisopropyl ether
 Polyethylene paste
 PPG-5 lanolin wax
 PPG-7-buteth-10
 PPG-10 cetyl ether phosphate
 Propylene carbonate, P. glycol alginate
 PVM/MA decadiene crosspolymer
 Sodium acrylates/vinyl isodecanoate
 crosspolymer
 Sodium carbomer
 Sorbitan laurate
 Stearic hydrazide
 2,2',4,4'-Tetrahydroxybenzophenone
 Tricaprin
 Tricaprylin
 Trilaurin
 Trimyrstin
 Tripalmitin
 Tristearin
Stimulant
 Capsicum frutescens extract
 Eleuthero ginseng (*Acanthopanax senticosus*)
 extract
 Guarana (*Paullinia cupana*) extract
 Lactococcus hydrolysate
 Methylsilanol elastinate
 Methylsilanol hydroxyproline aspartate
 TEA-hydroiodide
 Tocopheryl nicotinate
 Urocanic acid
 Yeast (*Saccharomyces cerevisiae*) extrate (Faex)
 Zedoary (*Curcuma zedoaria*) oil
 Zinc DNA
Sunscreen
 Basil (*Basilicum santum*) oil extract
 Basil (*Ocimum basilicum*) extract
 Benzophenone-3 -4
 3-Benzylidene camphor
 Borjoa sorbilis extract
 C12-15 alkyl benzoate
 Coffee (Coffea arabica) bean extract
 Ethyl salicylate
 Glyceryl PABA
 Homosalate
 Hydroquinone-beta-D-glucopyranoside
 Isoamyl p-methoxycinnamate
 Isopropylbenzyl salicylate
 Job's tears (*Coix lacryma-jobi*) extract
 Menthyl anthranilate
 Octyl dimethyl PABA, O. methoxycinnamate
 Octyl salicylate, O. triazone
 Oryzanol
 Pansy (*Viola tricolor*) extract
 PEG-25 PABA
 Phenylbenzimidazole sulfonic acid
 Rice (*Oryza sativa*) bran oil
 TEA-salicylate
 Titanium dioxide
Sunscreen UVB
 Benzophenone-5
 Eclipta alba extract
 PEG-25 PABA
 Steareth-100
 Tridecyl salicylate
Superfating agent
 Linoleamide DEA
 PEG-20 almond glycerides
 PEG-60 lanolin
 PEG-75 lanolin
Surfactant
 Alkyl dimethyl betaine
 Alkyldimethylamine oxide
 Ammonium cocoyl sarcosinate
 Ammonium C12-15 alkyl sulfate
 Ammonium dimethicone copolyol sulfate
 Ammonium laureth-5 sulfate
 Ammonium laureth-12 sulfate
 Ammonium laureth sulfate
 Ammonium lauroyl sarcosinate
 Ammonium lauryl sulfate, A.I. sulfosuccinate
 Ammonium myreth sulfate
 Ammonium nonoxynol 4 sulfate
 Azelamide MEA
 C20-40 alcohol ethoxylate
 C30-50 alcohol ethoxylate
 C40-60 alcohol ethoxylate
 Calcium dodecylbenzene sulfonate

- Calcium laurate
- Ceteareth-2 phosphate
- Ceteareth-5 phosphate
- Ceteareth-10 phosphate
- 5 Cetoleth-25
- Cetyl betaine, C. phosphate
- Cocamide MEA ethoxylate
- Cocamidopropyl betaine, potassium salt
- Cocamidopropyl betaine ammonium salt
- 10 Cocamidopropyl hydroxy sultaine
- Cocamidopropyl hydroxy sultaine, ammonium salt
- Cocamidopropyl hydroxy sultaine, potassium salt
- Cocamidopropylamine oxide
- 15 Coceth-7 carboxylic acid
- Coco-glucoside
- Cocooamphodiacetate lauryl-laureth sulfate
- Cocooamphodiacetate lauryl sulfate
- Cocooamphodiacetate trideceth sulfate
- 20 Coco phosphatidyl PG-dimonium chloride
- N-Cocoyl-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate
- Cocoyl glutamic acid
- Cocoyl hydrolyzed soy protein
- 25 Cocoyl hydroxyethyl imidazoline
- C11-15 pareth-9, -12, -20, -30, -40
- C12-13 pareth sulfate
- C12-13 pareth-5 carboxylic acid
- C12-15 pareth-12
- 30 C14-15 pareth-8 carboxylic acid
- DEA-oleth-5-phosphate
- DEA-oleth-20-phosphate
- Deceth-3, -6, -8
- Decyltetradeceth-25
- 35 Diceteareth-10 phosphoric acid
- Dimethicone copolyol
- Dimethicone copolyol almondate, D.c. isostearate
- Dimethicone copolyol laurate, D.c. olivate
- 40 Dimethicone copolyol phthalate
- Dimethicone copolyolamine
- Dimethicone propyl PG-betaine
- Diocetyldodeceth-2 lauroyl glutamate
- Diocetyldodeceth-5 lauroyl glutamate
- 45 Diocetyldodecyl lauroyl glutamate
- Disodium capryloamphodiacetate
- Disodium cocoamphodiacetate
- Disodium hydrogenated tallow glutamate
- Disodium laneth-5 sulfosuccinate
- 50 Disodium lauramide MEA-sulfosuccinate
- Disodium laureth sulfosuccinate
- Disodium oleamide MIPA-sulfosuccinate
- Disodium oleamide PEG-2 sulfosuccinate
- Disodium oleth-3 sulfosuccinate
- Disodium ricinoleamide MEA-sulfosuccinate
- Disodium tallamide MEA-sulfosuccinate
- Disteareth-2 lauroyl glutamate
- Disteareth-5 lauroyl glutamate
- Ethoxylated fatty alcohol
- Ethoxylated glycerol sorbitan saturated fatty acid ester
- Ethoxylated glycerol sorbitan unsaturated fatty acid ester
- Glycereth-25 PCA isostearate
- Glycereth-26 phosphate
- glyceryl hydroxystearate
- Hydrogenated tallowoyl glutamic acid
- Isopropyl hydroxybutyramide dimethicone
- coppolyol
- Lauramidopropyl betain
- Laureth-1, -2, -3, -4, -7, -12, -16
- Laureth-3 carboxylic acid, L. phosphate
- Laureth-5 carboxylic acid
- Laureth-11 carboxylic acid
- Lauroyl sarcosine
- Lauryl dimethylamine cyclocarboxypropyloleate
- Laryl hydroxyethyl imidazoline
- Linoleamide DEA
- Magnesium laureth-8 sulfate
- Meroxapol 105, 171, 172
- MEA-lauryl sulfate
- Mixed isopropanolamines myristate
- Myreth-7
- Myristoyl sarcosine
- Myristyl alcohol
- Nonoxynol-7, -9, -13, -15
- Nonoxynol-10 carboxylic acid
- Octoxynol-10, -12
- Octyldodeceth-10, -16
- Oleoyl sarcosine
- Oleth-2 phosphate
- Oleth-5 phosphate
- Oleyl betaine
- Oleyl hydroxyethyl imidazoline
- Palmitamine oxide
- Palmityl betaine
- PCA ethyl cocoyl arginate
- PEG-7 hydrogenated castor oil
- PEG-8 caprylic/capric glycerides
- PEG-8 laurate
- PEG-8 stearate
- PEG-15 glyceryl stearate
- PEG-25 glyceryl isostearate
- PEG-27 lanolin
- PEG-30 lanolin
- PEG-40 castor oil

	PEG-40 glyceryl stearate	Sodium laureth-11 carboxylate
	PEG-40 jojoba oil, P. lanolin	Sodium laureth-13-carboxylate
	PEG-60 glyceryl isostearate, P.g. stearate	Sodium laureth sulfate
	PEG-80 jojoba oil, P. sorbitan laurate	Sodium lauroamphoacetate
5	PEG-120 jojoba oil	Sodium lauroyl glutamate
	Pentasodium triphosphate	Sodium lauroyl hydrolyzed collagen
	Poloxamer 101, 122	Sodium lauroyl sarcosinate, S.I. taurate
	Polyglyceryl-2 dioleate	Sodium magnesium laureth sulfate
	Polysiloxane-polyether copolymer	Sodium methyl cocoyl taurate
10	Potassium cocoyl glycinate	Sodium methyl oleoyl taurate
	Potassium cocoyl hydrolyzed collagen	Sodium myristoyl glutamate
	Potassium C9-15 phosphate ester	Sodium myristoyl hydrolyzed collagen
	Potassium lauroyl hydrolyzed collagen	Sodium myristoyl sarcosinate
	Potassium lauryl sulfate	Sodium myristyl sulfate
15	Potassium myristoyl hydrolyzed collagen	Sodium nonoxynol-6 phosphate
	Potassium oleoyl hydrolyzed collagen	Sodium octoxynol-2 ethane sulfonate
	Potassium palmitate	Sodium oeryl sulfate
	Potassium undecylenoyl hydrolyzed collagen	Sodium oleoyl hydrolyzed collagen
	PPG-2-isodeceth-4, -6, -9, -12	Sodium stearyl hydrolyzed collagen
20	PPG-6 C12-18 pareth-11	Sodium trideceth sulfate
	Protein hydrolysates	Sodium undecylenoyl hydrolyzed collagen
	Quaternium-80	Sodium/TEA-lauroyl hydrolyzed collagen
	Quillaja saponaria extract	Sodium/TEA-lauroyl hydrolyzed keratin
	Raffinose laurate, R. myristate, R. oleate	Sorbitan isostearate
25	Raffinose palmitate, R. stearate	Stearoyl sarcosine
	Ricinoleamidopropyl betain	Sulfated castor oil
	Silicone quaternium-1, -8, -9	TEA-cocoyl glutamate
	Sodium alpha olefin sulfonate	TEA-cocoyl hydrolyzed collagen
	Sodium cocoamphoacetate	TEA-cocoyl hydrolyzed soy protein
30	Sodium cocoyl hydrolyzed wheat protein	TEA-C12-15 alkyl sulfate
	Sodium cocoyl isethionate	TEA-hydrogenated tallow glutamate
	Sodium C12-13 sulfate	TEA-lauroyl glutamate
	Sodium C12-14 pareth-2 sulfate	TEA-lauroyl keratin amino acids
	Sodium C12-15 pareth-3 sulfonate	TEA-lauroyl sarcosinate
35	Sodium C12-15 pareth-7 carboxylate	TEA-lauryl sulfate
	Sodium C12-15 pareth-7 sulfonate	TEA-myristoyl hydrolyzed collagen
	Sodium C12-15 pareth-8 carboxylate	Tocophereth-5 -10 -18 -20 -30 -50 -70
	Sodium C12-15 pareth-15 sulfonate	Trideceth-7 carboxylic acid
	Sodium C12-18 alkyl sulfate	Trideceth-9
40	Sodium C13-17 alkane sulfonate	Trideceth-19-carboxylic acid
	Sodium C14-16 olefin sulfonate	Tridecyl ethoxylate
	Sodium cetearyl sulfate	Triethanolamine C10-14 sulfate
	Sodium cetyl oleyl sulfate	Trilauryl phosphate
	Sodium coco-tallow sulfate	Wheat germamidopropyl betaine
45	Sodium cocoyl glutamate	Yucca vera extract
	Sodium cocoyl hydrolyzed collagen	
	Sodium cocoyl hydrolyzed soy protein	Suspending agent
	Sodium cocoyl sarcosinate	Acrylates/ceteth-20 methacrylates copolymer
	Sodium dimethicone copolyol acetyl	Acrylates/steareth-20 methacrylate copolymer
50	methyltaurate	Algin
	Sodium hydrogenated tallow glutamate	Bentonite
	Sodium isodecyl sulfate	C10 polycarbamyl polyglycol ester
	Sodium laureth-5 carboxylate	Calcium alginate

	Carbomer, C. 934	_____ /C10-C30 alkyl acrylate crosspolymer
	Carrageenan (Chondrus crispus)	_____ /ceteth-20 itaconate copolymer
	Cellulose gum	_____ /ceteth-20 methacrylates copolymer
	Cetyl hydroxyethylcellulose	_____ /steareth-20 itaconate copolymer
5	Dihydrogenated tallow phthalic acid amide	_____ /steareth-20 methacrylate copolymer
	Distearyl phthalic acid amide	_____ /steareth-50 acrylate copolymer
	Guar (Cyanopsis tetragonoloba) gum	_____ /vinyl isodecanoate crosspolymer
	Hectorite	_____ acid/acrylonitril copolymer
	Hydroxypropylcellulose	_____
10	Isobutylene/MA copolymer	_____ /magnesium hydroxide stearate
	Magnesium aluminum silicate	_____ acrylates/acrylonitril copolymer
	Methylcellulose	_____ alginate
	Pentasodium triphosphate	_____ alcohol
	Polyethylene, P. micronized	_____ acid
15	Propylene glycol alginate	_____ alcohol, B. behenate
	Quaternium-18 bentonite	_____ nite
	Quaternium-18 hectorite	_____ olycarbaryl polyglycol ester
	Sodium magnesium silicate	_____ 5 alcohols
	Sodium polynaphthalenesulfonate	_____ 6 alcohols
20	Stearalkonium bentonite, S. hectorite	_____ 6 acid
	Steareth-10 alil ether/acrylates copolymer	_____ Calcium alginate
	_____ (Astragalus gummifer) gum	_____ Calcium carrageenan
	_____ ribehenin	_____ Caprylic alcohol
	_____ rihydroxystearin	_____ Carbomer
25	_____ omethamine magnesium aluminum silicate	_____ Carboxymethyl hydroxyethylcellulose
	_____ anthan gum	_____ Carrageenan (Chondrus crispus)
	Sweetener	_____ Cellulose, C. gum
30	_____ saccharin	_____ Cetearyl alcohol, C. behenate
	_____ acid	_____ Cetearyl octanoate, C. stearate
	_____ acid	_____ Cetostearyl stearate
	_____ , ammoniated	_____ Cetyl alcohol
	_____ corn starch	_____ Cetyl hydroxyethylcellulose
35	_____	_____ Cetyl myristate, C. palmitate
	_____	_____ Cocamide
	_____	_____ Cocamide MEA, C. MIPA
	_____	_____ Cocamidopropylamine oxide
	_____	_____ Coco-betaine
	_____	_____ Coco-rapeseedate
40	_____ saccharin	_____ Coco/oleamidopropyl betaine
	_____	_____ Cocoyl amido hydroxy sulfo betaine
	_____	_____ Cocoyl monoethanolamide ethoxylate
	_____	_____ Colloidal silica sols
	_____ accelerator	_____ DEA-hydrolyzed lecithin
	_____ tyrosine	_____ DEA-linoleate
45	Carrot (Daucus carota) extract	_____ DEA-oleth-3 phosphate
	_____ acetyl tyrosinate methylsilanol	_____ DEA-oleth-10 phosphate
	_____ droxyacetone	_____ Decyl alcohol
	_____ malyl tyrosinate	_____ Dextran
	_____ alba extract in white emulsion	_____ Dextrin
50	_____ tyrosinate	_____ Dilaureth-10 phosphate
	_____ ckener	_____ Dioleth-8 phosphate
	_____ -VA crosspolmer	_____ DMHF
		_____ Ethoxylated fatty alcohol

	Gellan gum	
	Glyceryl behenate, G. stearate	
	Glyceryl polymethacrylate	
5	Guar (Cyanopsis tetragonoloba) gum	
	Guar hydroxypropyltrimonium chloride	
	Hectorite	
	Hexyl alcohol	
	Hydrated silica	
10	Hydrogenated rapeseed oil	
	Hydrogenated starch hydrolysate	
	Hydrogenated talloweth-60 myristyl glycol	
	Hydrolyzed oat flour	
	Hydrolyzed transgenic collagen	
15	Hydroxyethylcellulose	
	Hydroxypropyl chitosan	PEG-6 beeswax
	Hydroxypropyl guar	PEG-7 hydrogenated castor oil
	Hydroxypropyl methylcellulose	PEG-8
20	Hydroxypropylcellulose	PEG-8 diolate, P. distearate
	Isoceteth-10	PEG-8 stearate
	Isostearamide DEA	PEG-9M
	Isostearamidopropylamine oxide	PEG-12 beeswax
	Isostearoamphopropionate	PEG-18 glyceryl oleate/cocoste
	Joboba wax	PEG-23M
25	Karaya (Stericulia urens) gum	PEG-28 glyceryl tallowate
	L _____ DEA, L. MEA, L. MIPA	PEG-40 Joboba oil
	L _____ midopropyl betaine	PEG-45M
	Laureth-10	PEG-50 tallow amide
	L _____ linoleic DEA	PEG-55 propylene glycol oleate
30	L _____ linoleoyl diethanolamide	PEG-75 stearate
	L _____ myristoyl diethanolamide	PEG-90M
	L _____ alcohol, L. betaine	PEG-100 stearate
	L _____ amide DEA, L. MEA	PEG-120 methyl glucose diolate
	L _____ eic acid	PEG-150 distearate
35	L _____ mic acid	PEG-150 pentaerythrityl tetrastearate
	L _____ bean (Ceratonia siliqua) gum	PEG-160M
	Magnesium aluminum silicate	PEG-200 glyceryl stearate
	MDM hydantoin	PEG-200 glyceryl tallowate
	Methylcellulose	Pentaerythrityl tetrabehenate
40	Montmorillonite	Pentaerythrityl tetrastearate
	Myristamide DEA, M. MEA	Poloxamer 105, 124, 185, 237, 338, 407
	Myristamine oxide	Polyacrylic acid
	Myristyl alcohol	Polysorbate 20
	Octacosanyl stearate	Potassium alginate, P. chloride
45	Oleamide, O. DEA, O. MEA	Potassium oleate, P. stearate
	Palmitamide MEA	PPG-5-ceteth-10 phosphate
	Pectin	Propylene glycol stearate
	PEG-2 laurate	PVM/MA decadiene crosspolymer
	PEG-3 distearate, P. lauramide	PVP
50	PEG-3 lauramine oxide	Quaternium-18 bentonite
	PEG-4 diisostearate, P. oleamide	Quaternium-18 hectorite
	PEG-5M	Rapeseed oil, ethoxylated high erucic acid

- Ricinoleamide MEA
 Sesamide DEA
 Sodium acrylates/vinyl isodecanoate crosspolymer
 Sodium carbomer, S. carrageenan
 Sodium ceteth-13-carboxylate
 Sodium chloride
 Sodium magnesium silicate, S. stearate
 Sorbitan sesquiossearate, S. tristearate
 Soyamide DEA
 Soyamidopropyl betaine
 Starch polyacrylonitrile copolymer-potassium salt
 Starch polyacrylonitrile copolymer-sodium salt
 Stearalkonium bentonite, S. hectorite
 Stearamide
 Stearamide DEA, S. MEA, S. MEA-stearate
 Stearamidopropyl dimethylamine lactate
 Stearamine oxide
 Steareth-10 allyl ether/acrylates copolymer
 Stearic acid
 Stearyl alcohol
 Synthetic beeswax
 Tallowamide MEA
 TEA-acrylates/acrylonitrogens copolymer
 Tragacanth (Astragalus gummi) gum
 Tribehentin
 Trihydroxystearin
 Tromethamine magnesium aluminum silicate
 Wheat germamide DEA
 Wheat germamidopropyl betain
 Xanthan gum
Thixotropes
 Bentonite
 Hectorite
 Sodium magnesium silicate
 Stearalkonium bentonite
Toner
 Althea officinalis extract
 Clover (Trifolium pratense) extract
 Dog rose (Rosa canina) hips extract
 Ginseng (Panax ginseng) extract
 Horsetail extract
 Lemon bioflavonoids extract
 Meadowsweet (Spiraea ulmaria) extract
 Nettle (Urtica dioica) extract
 Rose (Rosa multiflora) extract
 Rosemary (Rosmarinus officinalis) extract
UVA absorber
 Benzophenone-1, -2, -3, -4, -6, -8, -9, -11, -12
 Butyl methoxydibenzoylmethane
 Corallina officinalis

Isopropyl dibenzoylmethane
 Menthyl anthranilate
 2,2',4,4'-Tetrahydroxybenzophenone
 Titanium dioxide
 Zinc oxide

UVB absorber

Argania spinosa oil
 Benzophenone-1 -2 -3 -4 -6 -9 -11
 Corallina officinalis
 DEA-methoxycinnamate
 Drometrizole
 Ethyl dihydroxypropyl PABA
 Etocrylene
 homosalate
 Isoamyl p-methoxycinnamate
 Isopropyl methoxycinnamate
 Isopropylbenzyl salicylate
 4-Methylbenzylidene camphor
 Octocrylene
 Octrizole
 Octyl dimethyl PABA
 Octyl methoxycinnamate
 Octyl salicylate, O. triazene
 PABA
 PEG-25 PABA
 Phenylbenzimidazole sulfonic acid
 Shea butter, ethoxylated
 TEA-salicylate
 Titanium dioxide
 TriPABA panthenol
 Zinc oxide

Vegetable oil

Apricot (Prunus armeniaca) kernel oil
 Avocado (Persea gratissima) oil
 Baobab oil
 Calendula officinalis oil
 Chaulmoogra (Taraktogenos kurzii) oil
 Coconut (Cocos nucifera) oil
 Corn (Zea mays) oil
 Cottonseed (Gossypium) oil
 Gold of pleasure oil
 Grape (Vitis vinifera) seed oil
 Hazel (Corylus avellana) nut oil
 Hybrid sunflower (Helianthus annuus) oil
 Hydrogenated coconut oil
 Hydrogenated cottonseed oil
 Hydrogenated vegetable oil
 Jojoba (Buxus chinensis) oil
 Kukui (Aleurites moluccana) nut oil
 Macadamia ternifolia nut oil
 Meadowfoam (Limnanthes alba) seed oil

- Mexican poppy oil
 Palm (*Elaeis guineensis*) kernel oil
 Partially hydrogenated soybean oil
 5 Peach (*Prunus persica*) kernel oil
 Peanut (*Arachis hypogaea*) oil
 Pecan (*Carya illinoensis*) oil
 Pumpkin (*Cucurbita pepo*) seed oil
 Quinoa (*Chenopodium quinoa*) oil
 Rapeseed (*Brassica caepstris*) oil
 10 Rice (*Oryza sativa*) bran oil
 Safflower (*Carthamus tinctorius*) oil
 Seabuckthorn oil
 Sesame (*Sesamum indicum*) oil
 Sisymbrium irio oil
 15 Soybean (*Glycine soja*) oil
 Sunflower (*Helianthus annuus*) seed oil
 Walnut (*Juglans regia*) oil
 Wheat (*Triticum vulgare*) germ oil
 Wild borage oil
 20 Vitamin
 Aesculus chinensis extract
 Ascorbic acid
 Ascorbic acid polypeptide
 25 Ascorbyl palmitate
 Biotin
 Calcium pantothenate
 Cholecalciferol
 Cyanocobalamin
 30 Eclipta alba extract
 Emblica officinalis extract
 Equisetum arvense extract
 Ergocalciferol
 Esculin
 35 Ethyl linoleate
 Folic acid
 Laminaria japonica extract
 Marsilea minuta extract
 Melaleuca bracteata extract
 40 Menadione
 Nasturtium sinensis extract
 Nelumbium speciosum extract
 Niacin
 Niacinamide, N. ascorbate
 45 Nicotinamide
 Nicotinic acid
 Ocimum basilicum extract
 Panthenyl triacetate
 Pantothenic acid
 50 Phytonadione
 Pyridoxine HCl
 Retinol
 Retinyl acetate, R. palmitate
 Retinyl palmitate polypeptide
 Retinyl propionate
 Riboflavin tetraacetate
 Sodium ascorbate
 Thiamine HCL
 Tocopherol
 Tocopheryl acetate, T. succinate
Wax
 Bayberry (*Myrica cerifera*) wax
 Behenoxy dimethicone
 C16-18 alkyl methicone
 Candelilla (*Euphorbia cerifera*) wax
 Carnauba (*Copernicia cerifera*) wax
 Ceresin
 Cetyl dimethicone, C. isooctanoate
 Dialkyldimethylpolysiloxane
 Dimethiconol hydroxystearate
 Dimethiconol stearate
 Hydrogenated castor oil
 Hydrogenated cottonseed oil
 Hydrogenated jojoba oil, H.j. wax
 Hydrogenated palm kernel oil
 Hydrogenated rapeseed oil
 Hydrogenated rice bran wax
 hydrogenated vegetable oil
 Isooctadecyl isononanoate
 Japan (*Rhus succedanea*) wax
 Jojoba esters
 Montan (Montan cera) wax
 Ouricury wax
 Ozokerite
 Polyglyceryl-3 beeswax
 Spermaceti
 Stearoxymethicone/dimethicone copolymer
 Stearoxyltrimethylsilane
 Synthetic candelilla wax
 Synthetic carnauba
Wetting agent
 Benzalkonium chloride
 Benzethonium chloride
 Cetalkonium chloride
 Cetareth-20
 Ceteth-20
 Cetyl pyridinium chloride
 Cocoamphodipropionic acid
 Decaglycerol monodiolate
 Deceth-9
 Dihydroabietyl methacrylate
 Dimethicone copolyol methyl ether
 Dimethicone copolyol phthalate
 Dioctyl sodium sulfosuccinate

- Ethyl hydroxymethyl oleyl oxazoline
Hydroxylated milk glycerides
Isolaureth-6
Lanolin acid
5 Lauryl pyrrolidone
Lecithin
Methyl hydrogenated rosinat
Methyl rosinat
Nonyl nonoxynol-5
10 Octoxynol-8, 70
Oleth-15
Oleth-20 phosphate
PEG-9 castor oil
PEG-15 castor oil
15 PEG-20 glyceryl stearate
PEG-20 sorbitan triisostearate
PEG-45 palm kernel glycerides
PEG-60 almond glycerides, P.corn glycerides
PEG-60 shea butter glycerides
20 PEG-70 mango glycerides
PEG-75 shorea butter glycerides
PEG-80 sorbitan laurate
Poloxamer 123, 181, 182, 184, 235, 334
Polyether trisiloxane
25 Polyglyceryl-3 oleate
Polyglyceryl-6 dioleate
Polyglyceryl-10 tetraoleate
Polysorbate 60, 80
PPG-2-isodeceth-4, -6, -9, -12
30 PPG-10 lanolin alcohol ether
Propylene glycol
Sodium butoxyethoxy acetate
Sodium capryloamphohydroxypropylsulfonate
Sodium decyl diphenyl ether sulfonate
35 Sodium dodecylidiphenyl ether sulfonate
Sodium lauryl sulfate
Sulfated castor oil
Triisocetyl citrate
Triisostearin PEG-6 esters
40 Yucca vera extract

Claims:

1. A cosmetic composition comprising:
a cosmetically acceptable carrier, comprising a reverse thermal viscosifying polymer network comprising at least one poloxamer component randomly bonded to at least one poly(acrylic acid) component said polymer network capable of aggregation in response to a change in temperature; and
a cosmetically active agent which imparts a preselected cosmetic effect, said carrier and said agent disposed within an aqueous-based medium.
2. A cosmetic composition for topical application, comprising:
a cosmetically acceptable carrier, comprising a reverse thermal viscosifying polymer network comprising at least one poloxamer component capable of aggregation in response to a change in temperature randomly bonded to at least one poly(acrylic acid) component; and
a cosmetically active agent selected to treat imperfections or disorders of the skin, said carrier and said agent disposed within an aqueous-based medium.
3. The cosmetic composition of claim 1, wherein the cosmetic composition is a shampoo and the cosmetically active agent comprises a cleansing surfactant.
4. The cosmetic composition of claim 1, wherein the cosmetic composition is a moisturizer and the cosmetically active agent comprises a moisturizer.
5. The cosmetic composition of claim 1, wherein the cosmetic composition is a sunscreen and the cosmetically active agent comprises a UV-absorbing agent.
6. The cosmetic composition of claim 1, wherein the cosmetic composition is an acne cream and the cosmetically active agent comprises an antiacne agent.

7. The cosmetic composition of claim 1, wherein the cosmetic composition is a hair straightener and the cosmetic agent comprises a base for increasing the pH.

8. The cosmetic composition of claim 1, wherein the cosmetic composition is a sunless tanning lotion and the cosmetically active agent comprises skin tinting agent.

9. The cosmetic composition of claim 1, wherein the cosmetic composition is an antiperspirant and the cosmetically active agent comprises aluminum chlorhydrate.

10. The cosmetic composition of claim 1, wherein the cosmetic composition is a shaving cream and the cosmetically active agent comprises an emollient and a foaming surfactant.

11. The cosmetic composition of claim 1, wherein the cosmetic composition is a face cosmetic and the cosmetically active agent comprises a pigment.

12. The cosmetic composition of claim 1 or 2, wherein the cosmetic agent comprises a hydrophobic material, wherein the cosmetically acceptable carrier stabilizes the hydrophobic material in the aqueous medium.

13. The cosmetic composition of claim 2, wherein said cosmetic agent selected to treat imperfections or disorders of the skin is selected from the group consisting of acidulents, antiacne agents, anti-aging agents, anti-inflammatories, anti-irritants, antioxidants, depilatories, detergents, disinfectants, emollients, exfoliants, humectants, lubricants, moisturizers, skin conditioners, skin protectants, skin lightening agents, skin soothing agents, suncreening agents, and tanning accelerators and mixtures thereof.

14. The composition of claim 4, wherein said composition further comprises a cosmetic agent selected from the group consisting of humectants and emollients.

15. The composition of claim 1 or 2, further comprising one or more additives selected from the group consisting of preservatives, abrasives, acidulents, antiacne agents, anti-aging agents, antibacterials, anticaking, anticaries agents, anticellulites, antidandruff, antifungal, anti-inflammatories, anti-irritants, antimicrobials, antioxidants, astringents, antiperspirants, antiseptics, antistatic agents, binders, buffers, additional carriers, chelators, cell stimulants, cleansing agents, conditioners, deodorants, depilatories, detergents, dispersants, emollients, emulsifiers, enzymes, essential oils, exfoliants, fibers, film forming agents, fixatives, foaming agents, foam stabilizers, foam boosters, fungicides, gellants, glosser, hair conditioner, hair set resins, hair sheen agents, hair waving agents, humectants, lubricants, moisture barrier agents, moisturizers, ointment bases, opacifier, plasticizer, polish, polymers, powders, propellant, protein, refatting agents, sequestrant, silicones, skin calming agents, skin cleansers, skin conditioners, skin healing, skin lightening agents, skin protectants, skin smoothing agents, skin softening agents, skin soothing agents, stabilizers, sunscreen agents, surfactants, suspending agents, tanning accelerators, thickeners, vitamins, waxes, wetting agents, liquefiers, colors, flavors and/or fragrances.

16. The composition of claim 1, wherein the cosmetic composition takes a form selected from the group consisting of lotions, creams, sticks, roll-on formulations, mousses, sprays, aerosols, pad-applied formulations and masks.

17. The composition of claim 1, wherein the viscosification occurs at a temperature in the range of about 27-40°C.

18. The composition of claim 1, wherein the viscosification occurs at a temperature in the range of about 30 to 37°C.

19. The composition of claim 1, wherein said composition is formulated as a product selected from the group consisting of baby products, baby shampoos, lotions, powders and creams; bath preparations, bath oils, tablets and salts, bubble baths, bath fragrances, bath capsules; eye makeup preparations, eyebrow pencil, eyeliner, eye shadow, eye lotion, eye makeup remover, mascara; fragrance preparations, colognes, toilet waters, powders and sachets; noncoloring hair preparations, hair conditioner, hair spray, hair straighteners, permanent waves, rinses, shampoos, tonics, dressings and other grooming aids; color cosmetics; hair coloring preparations, hair dye, hair tints, hair color sprays, hair lighteners and hair bleaches; makeup preparations, face powders, foundations, leg and body paints, lipstick; makeup bases, rouges and makeup fixatives; manicuring preparations, basecoats, undercoats, cuticle softeners, nail creams, nail extenders, nail polish and enamel, and remover, oral hygiene products, dentrifices, mouthwashes; personal cleanliness, bath soaps, detergents, deodorants, douches and feminine hygiene products; shaving preparations, aftershave lotion, beard softeners, men's talcum shaving cream, shaving soap, preshave lotions; skin care preparations, skin cleansing preparations, skin antiseptics, depilatories, face and neck cleansers, body and hand cleansers, foot powders; moisturizers, night preparations, paste masks, skin fresheners; and suntan preparations, suntan creams, gels and lotions, and indoor tanning preparations.

20

20. The cosmetic composition of claim 1 or 2, wherein the poloxamer component is present in an amount in the range of about 0.01 to 20 wt% and the poly(acrylic acid) component is present in the amount of about 0.01 to 20 wt%.

25

21. The cosmetic composition of claim 1, wherein the polymer network comprises a plurality of poloxamers.

30

22. The cosmetic composition of claim 1, wherein the polymer network comprises a plurality of poloxamer components randomly bonded to a poly(acrylic acid) backbone.

23. The cosmetic composition of claim 1, wherein the reversibly
viscosifying polymer composition comprises a plurality of poly(acrylic acid)
components randomly bonded to a poloxamer component.

5 24. The cosmetic composition of claim 1, wherein the aqueous-based
medium is selected from the group consisting of water, salt solutions and water with
water-miscible organic compound(s).

25. The cosmetic compositions of claim 1, further comprising an additive
10 selected to increase transition temperature and increase viscosity of the reversible
viscosifying polymer network.

26. The cosmetic composition of claim 1, further comprising an additive
selected to increase transition temperature and decrease viscosity of the reversible
15 viscosifying polymer network.

27. The cosmetic composition of claim 1, further comprising an additive
selected to increase transition temperature without affecting viscosity of the reversible
viscosifying polymer network.

20

28. The cosmetic composition of claim 1, further comprising an additive
selected to decrease transition temperature and increase viscosity of the reversible
viscosifying polymer network.

25 29. The cosmetic composition of claim 1, further comprising an additive
selected to decrease transition temperature and decrease viscosity of the reversible
viscosifying polymer network.

30. The cosmetic composition of claim 1, further comprising an additive selected to decrease transition temperature without affecting viscosity of the reversibly viscosifying polymer network.

5 31. The cosmetic composition of claim 1, further comprising an additive selected to increase viscosity without affecting transition temperature of the reversibly viscosifying polymer network.

10 32. The cosmetic composition of claim 1, further comprising an additive selected to decrease viscosity without affecting transition temperature of the reversibly viscosifying polymer network.

15 33. The cosmetic composition of claim 1 or 2, characterized in that the gel remains translucent to light before and after response to the environmental stimulus.

34. The cosmetic composition of claim 1, wherein the poly(acrylic acid) is branched.

20 35. Method of making a cosmetic composition, comprising:
dissolving a poloxamer capable of aggregation in response to a change in temperature in acrylic acid monomer;
initiating polymerization of the monomer to form a poly(acrylic acid) randomly bonded to the poloxamer, so as to form a reversibly viscosifying polymer composition;
mixing the reversibly gelling polymer compositions with a cosmetic agent which
25 imparts a desired cosmetic effect to the composition.

36. The method of claim 36, wherein a polymerization initiator is selected to provide the polymer network having a selected temperature of viscosification.

30 37. The method of claim 36, wherein one or more poloxamers are added.

38. The cosmetic composition of claim 1, wherein the reversibly
viscösifying polymer network is present in an amount in the range of 0.01% - 10%.

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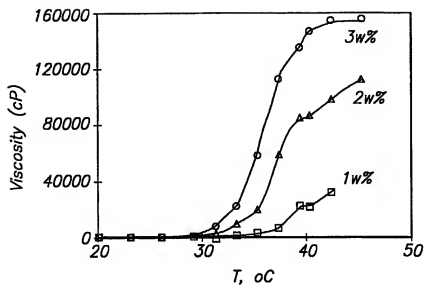


FIG. 1

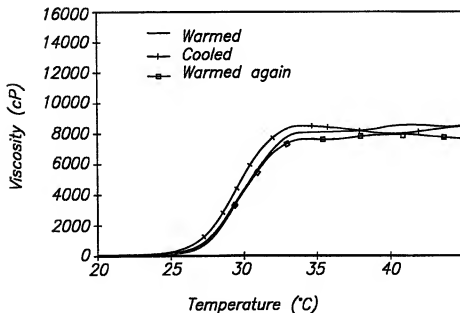
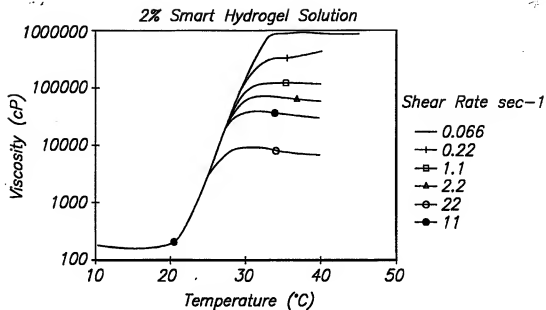
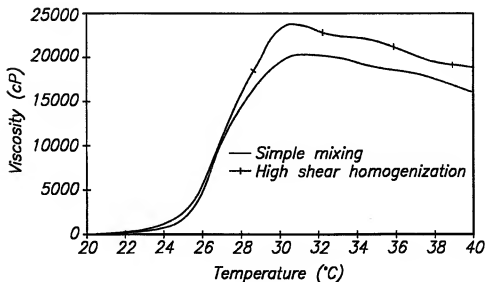


FIG. 2

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**FIG. 3****FIG. 4**

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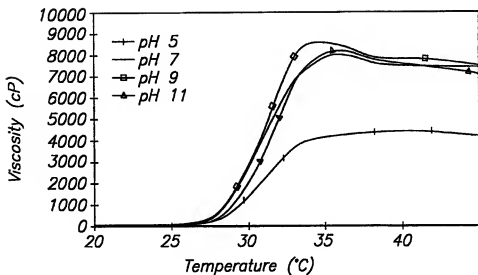


FIG. 5

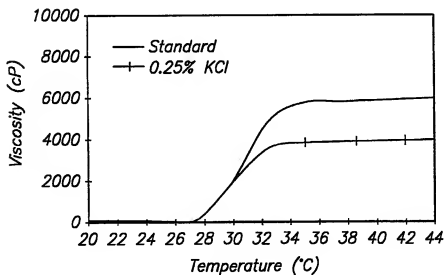


FIG. 6

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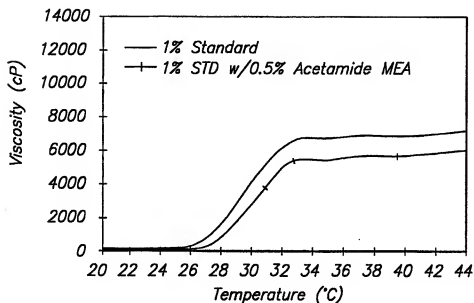


FIG. 7

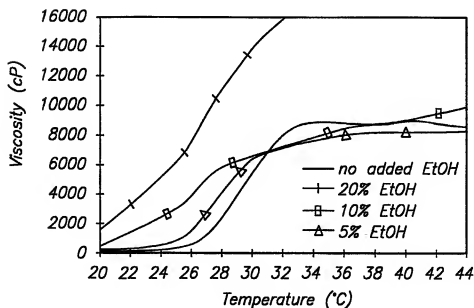
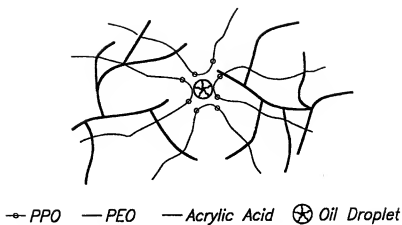
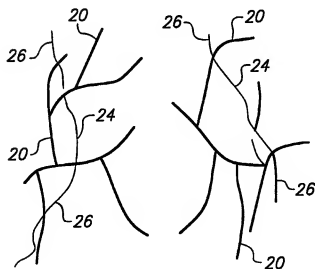
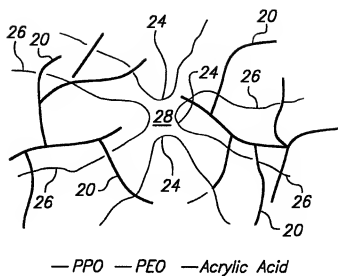
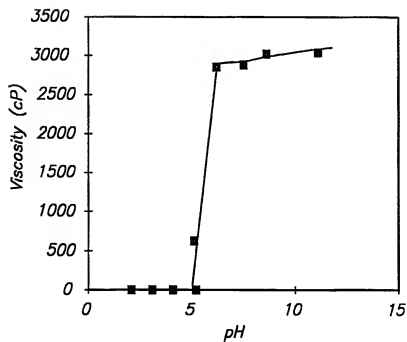


FIG. 8

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**FIG. 9****FIG. 10A**

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**FIG. 10B****FIG. 11**

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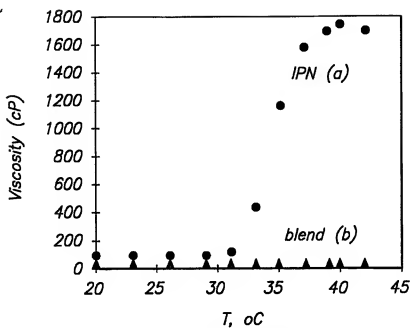


FIG. 12

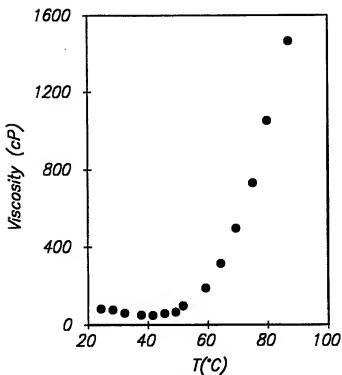
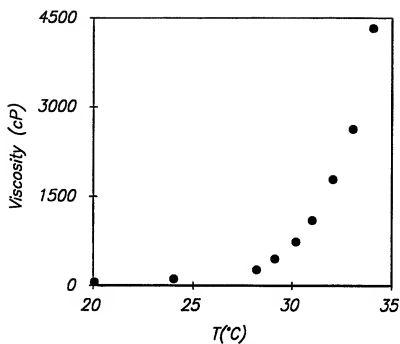
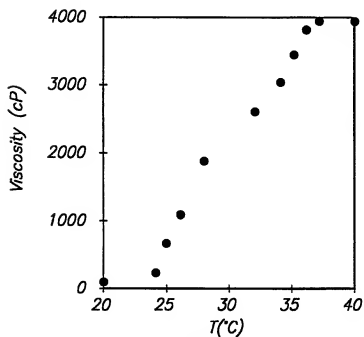
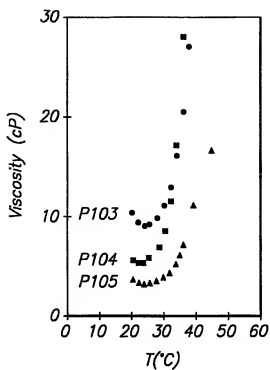
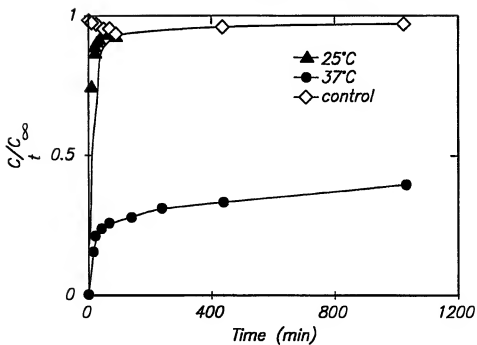


FIG. 13

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**FIG. 14****FIG. 15**

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**FIG. 16****FIG. 17**

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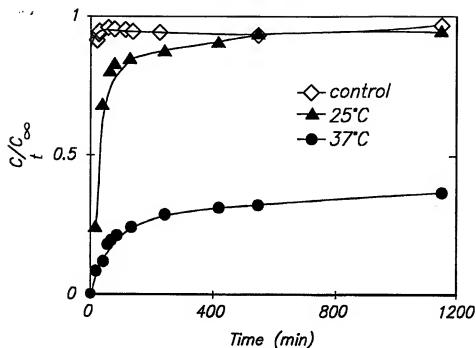


FIG. 18

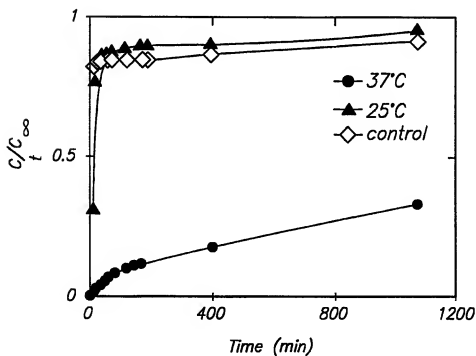


FIG. 19

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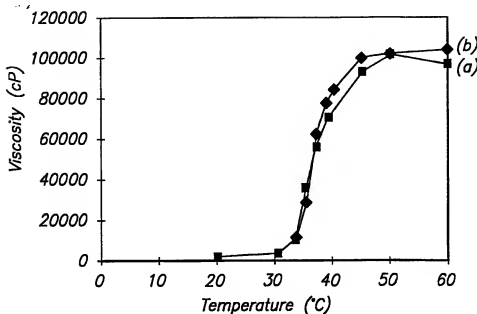


FIG. 20

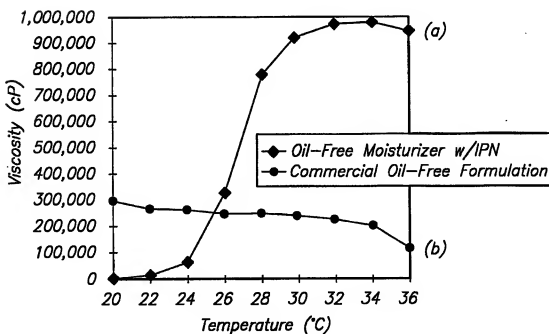


FIG. 21

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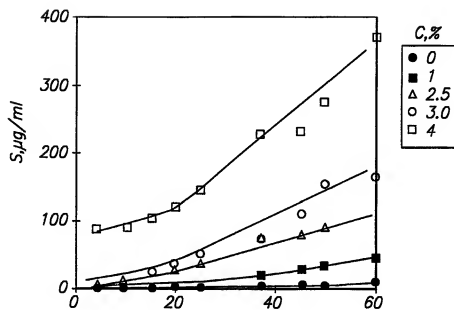


FIG. 22A

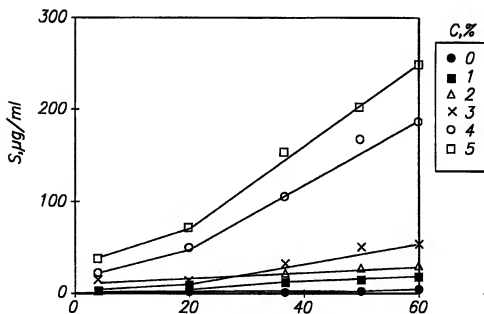


FIG. 22B

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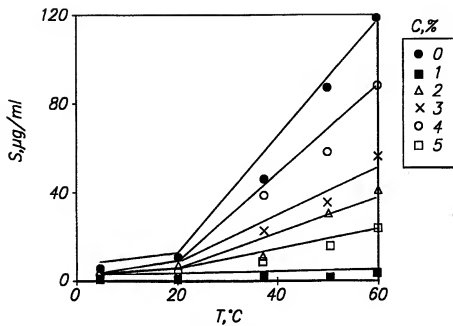


FIG. 22C

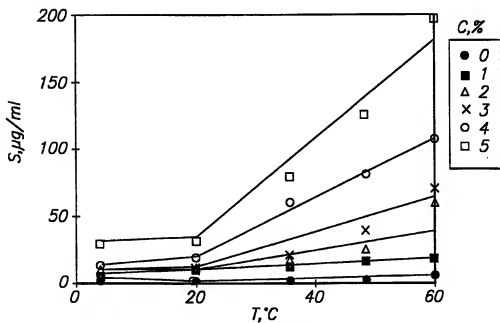


FIG. 22D

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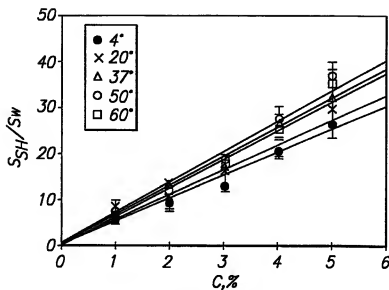


FIG. 23

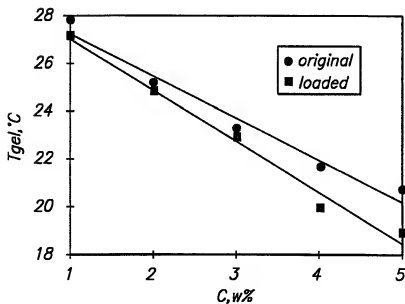
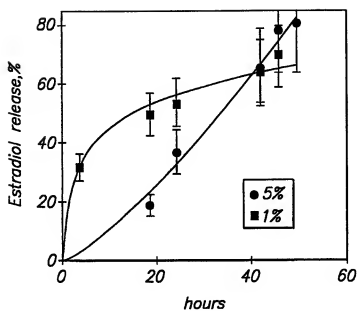
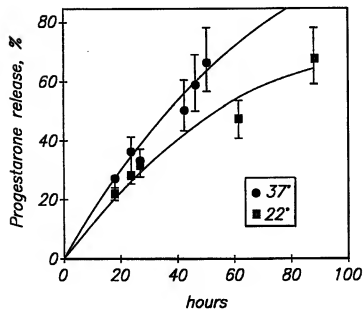


FIG. 24

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**FIG. 25A****FIG. 25B**

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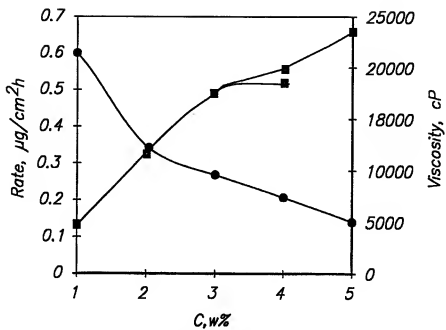


FIG. 26

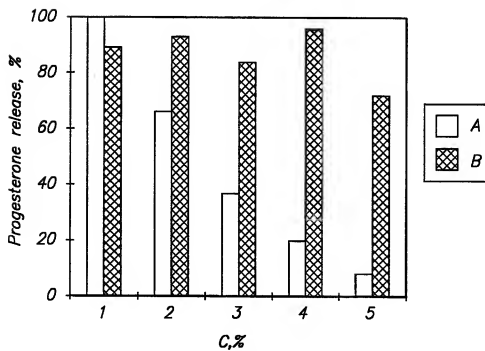
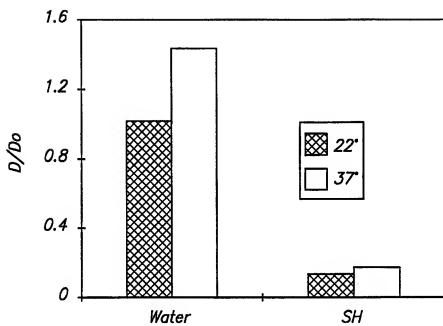


FIG. 27

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**FIG. 28**

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/09211**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(6) :A61K 7/00, 7/021, 7/025, 7/06, 7/09, 7/16, 7/32, 7/42, 31/74

US CL :Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/49, 59, 63, 64, 65, 70.1, 70.2, 60.7, 78.02, 78.08, 400, 401, 405

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS: COSMETIC, POLYACRYLIC ACID, POLYMER NETWORK, POLOXAMER

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,P	US 5,662,892 A (BOLICH, JR. et al.) 02 September 1997, see entire document.	1-38
Y	US 5,106,609 A (BOLICH, JR. et al.) 21 April 1992, see entire document.	1-38

☐ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

* Special categories of cited documents:	*T	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*A' document defining the general state of the art which is not considered to be of particular relevance	*X	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
*B' earlier document published on or after the international filing date	*Y	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
*E' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*A"	document member of the same patent family
*O' document referring to an oral disclosure, use, exhibition or other means		
*P' document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

03 AUGUST 1998

Date of mailing of the international search report

01 SEP 1998

 Name and mailing address of the ISA/US
 Commissioner of Patents and Trademarks
 Box PCT
 Washington, D.C. 20231
 Facsimile No. (703) 305-3230

Authorized officer

SHELLEY A. DODSON

Telephone No. (703) 308-1235

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US98/09211

A. CLASSIFICATION OF SUBJECT MATTER:

US CL : 424/49, 59, 63, 64, 65, 70.1, 70.2, 60.7, 78.02, 78.08, 400, 401, 405

PATENT ABSTRACTS OF JAPAN(11)Publication number : **02-290810**(43)Date of publication of application : **30.11.1990**

(51)Int.Cl.

A61K 9/12
A61K 7/00
A61K 7/06
// A61K 7/40
A61K 9/70
A61K 9/70
C08L 53/02

(21)Application number : **01-111651**(71)Applicant : **HISAMITSU PHARMACEUT CO INC**(22)Date of filing : **28.04.1989**

(72)Inventor : **NAKAGAWA AKIRA**
MIYATA SATORU
MASUDA KENJI

(54) AEROSOL TYPE PREPARATION**(57)Abstract:**

PURPOSE: To obtain an aerosol preparation which has high safety and forms strong coating film which dries fast without tackiness and shows good adhesion to skins with very increased peeling resistance by using ABA type thermoplastic elastomer or a mixture thereof with a cellulosic component.

CONSTITUTION: The subject aerosol preparation contains, as coating film-forming agent, an ABA type thermoplastic elastomer such as a styrene-butadiene-styrene block copolymer, styrene-isoprene-styrene block copolymer or a mixture thereof with a cellulosic component such as methyl cellulose or hydroxyethylcellulose) in an amount of 0.05 to 5wt.%, preferably 0.1 to 2wt.%. Liquefied natural gas and/or dimethyl ether are used as an injection agent and the amount is 20 to 55wt.% so that the pressure of the preparation is kept at 1 to 8kg/cm².

⑫ 公開特許公報(A) 平2-290810

⑬ Int. Cl. ³	識別記号	庁内整理番号	⑬ 公開 平成2年(1990)11月30日
A 61 K 9/12 7/00	E S J	7624-4C 8413-4C 8413-4C 8314-4C 6971-4C 7624-4C 7624-4C 7142-4J	
// A 61 K 7/06 7/40 9/70	3 8 8 3 9 3		
C 08 L 53/02	L L W		

審査請求 未請求 請求項の数 4 (全5頁)

⑭ 発明の名称 エアゾール製剤

⑮ 特 願 平1-111651

⑯ 出 願 平1(1989)4月28日

⑰ 発 明 者	中 川 晃	佐賀県鳥栖市藤木町970-11
⑰ 発 明 者	宮 田 悟	佐賀県鳥栖市西田町103番地
⑰ 発 明 者	益 田 憲 治	佐賀県鳥栖市東町2丁目907
⑰ 出 願 人	久光製薬株式会社	佐賀県鳥栖市田代大官町408番地

明 細 書

1. 発明の名称

エアゾール製剤

2. 特許請求の範囲

- 1) 被膜形成剤としてABA型熱可塑性エラストマーを含有してなるエアゾール製剤。
- 2) 被膜形成剤としてABA型熱可塑性エラストマー及びセルロース系成分を含有してなるエアゾール製剤。
- 3) 被膜形成剤のABA型熱可塑性エラストマーと有効成分を含有してなるエアゾール製剤。
- 4) 被膜形成剤のABA型熱可塑性エラストマー及びセルロース系成分と有効成分を含有してなるエアゾール製剤。

3. 発明の詳細な説明

(1) 産業上の利用分野

本発明は香粧品、医薬部外品、外用医薬品、外

皮用品等に利用される外用組成物に関するものである。更に詳しくは、ABA型熱可塑性エラストマー或はABA型熱可塑性エラストマー及びセルロース系成分の混合物を被膜形成剤として含有し、皮膚上に噴霧することにより被膜を形成させ、効果的に有効成分を皮膚に適用させることを特徴とするエアゾール製剤に関するものである。これは、有効成分を変えることによって、それぞれ制汗剤、昆虫忌避剤、抗菌剤、消炎鎮痛剤等に应用することができる。

(2) 従来の技術

これまで被膜形成を有するエアゾール製剤としては、被膜形成剤としてアルミニウムオクテートを用いたもの(特開昭52-21051)、ポリビニルピロリドン、ポリビニルアセテートを用いたもの(特開昭54-46818)、ポリアミド樹脂、ビニル樹脂を用いたもの(特開昭54-140714)等が既に公知である。しかしながら、これらはいずれも①被膜の乾燥が遅い、②ペ

とつて使用感が悪い、③被膜が皮膚からはがれやすい、④アセトン、酢酸エチル等の有機溶媒に溶かしているため適用時に身体に有害である等の問題点を有している。本発明の被膜形成エアゾール製剤は、被膜形成剤として従来、接着剤、貼付剤、プラスチック改質剤等の材料として利用されていた熱可塑性エラストマーを用いたもので、先行技術とは全く異なる新規な発明である。

(3) 発明が解決しようとする問題点

被膜形成剤を配合したエアゾール製剤の先行技術は、上記のような種々の問題点を有している。従って、本発明の目的は以下に示すような特徴を有する被膜形成エアゾール製剤を得ることである。

- 1) 即乾性でべとつかない。
- 2) 被膜が強く衣服等を汚さない。
- 3) 安全性の高いエアゾール製剤であること。
- 4) 皮膚密着性がよくはがれにくい。

(4) 問題を解決するための手段

チレン-イソブレン-スチレンブロック共重合体(SIS)がある。ABA型テレブロック共重合体の市販品としては、例えば、シェル石油社製のカリフレックスTR-1107、TR-1111、旭化成社製のソルブレン-418、住友化学社製のスミカEX-2359、スミカEXB-2362や日本ゼオン社製クインタック-3420、クインタック3435等の商品を使用することができ。

これらのエラストマーの配合量は、0.05～5重量%、好ましくは0.1～2重量%が1種または2種以上の組み合わせで配合される。また、セルロース系成分としてはメチルセルロース、エチルセルロース、プロピルセルロース、ヒドロキシエチルセルロース、ヒドロキシプロピルセルロース、エチルヒドロキシエチルセルロース、メチルヒドロキシエチルセルロース等の被膜基剤からなる。尚、噴射剤としては例えば、液化天然ガス、ジメチルエーテル、或はフロン11、フロン12、フロン113、フロン114、フロン142、フロ

本発明者等はこのような状況に鑑み、鋭意研究を行った結果、被膜形成剤としてABA型の熱可塑性エラストマー或はABA型の熱可塑性エラストマー及びセルロース系成分を配合したエアゾール製剤が先の目的を十分満足する製剤であることを見出し、本発明を完成した。

即ち、被膜形成剤としてABA型熱可塑性エラストマー或はABA型熱可塑性エラストマー及びセルロース成分を含有してなるエアゾール製剤は、べとつきがなく、かつ使用感のよい即乾性の被膜を形成することを見出し本発明を完成した。以下に本発明について更に詳細に説明する。

本発明に使用される熱可塑性のエラストマーはABA型テレブロック共重合体であり、一般式ABA(式中Aは実質的にモノビニル置換芳香族化合物重合体ブロック、Bは実質的に共役ジオレフィン重合体ブロック)で表されるテレブロック共重合体及びこれらの混合物である。ABA型テレブロック共重合体には、例えばスチレン-ブタジエン-スチレンブロック共重合体(SBS)、ス

ン123、フロン134a、フロン124、フロン132b、フロン133a等の置換化窒素ガス、炭酸ガス等、通常のエアゾール製剤で用いられる噴射剤が挙げられるが、液化天然ガス及びジメチルエーテルまたはこれらの混合物が特に好ましい。これらの噴射剤の配合量は10～60重量%、好ましくは20～55重量%、製剤の圧力が1～8kg/cm²となるように圧入される。

また、有効成分として、非ステロイド系の消炎鎮痛剤、例えばサリチル酸グリコール、サリチル酸メチル、ピロキシカム及びインドメタシン、ケトプロフェン、イブフェナック、ピロキシカム、ロキソプロフェン、チアプロフェン、ブアラプロフェン、フェンブフェン、ジクロフェナック、フェルビナク、ケトロラック、ペルモプロフェン、ナブメトン、ナプロキセン、フルビプロフェン等の酸性的非ステロイド系消炎鎮痛剤及びそのエステル誘導体、ステロイド系の消炎鎮痛剤例えば、フルオシノニド、プロピオン酸クロベタゾール等、抗菌剤例えば、クロトリマゾール、トルナフテ

ト、硝酸エコナゾール、硝酸オモコナゾール、硝酸チオコナゾール、硝酸ケトコナゾール、硝酸ミコナゾール、硝酸イソコナゾール等、制汗剤例えばジエチルトリアミド、カンフル等が配合される。尚、これらの有効成分は0.01~4重量%、好ましくは0.03~3重量%が配合される。また、上記有効成分を溶解するために、クロタミトン、ベンジルアルコール、脂肪酸エステル、グリコール類等の溶剤を配合することができる。尚、これらの溶剤は0.5~50重量%、好ましくは1~30重量%が配合される。更に、使用感を良くする目的でタルク、ナイロンパウダー、シリコンパウダー等の粉末を配合することも可能である。

次に、本発明の製剤の製造方法について述べる。本発明の製剤を製造するためには、まず耐圧容器にエラストマー、有効成分、或はセルロース系成分、或は必要に応じて各種添加剤を加えた後、バルブを付け、充填剤を圧入することによって製造することができる。

以下に実施例を示し本発明を更に具体的に説明

する。

実施例 1

スチレン-イソブレン-スチレンテブレック共重合体（シェル化学製：カリフレックスTR-11107）0.5gを耐圧容器に入れ、バルブを付けた後、LPG/ジメチルエーテル（60/40：w t %）52gを圧入し、被膜形成エアゾール製剤を得た。

実施例 2

スチレン-イソブレン-スチレンテブレック共重合体（シェル化学製：カリフレックスTR-11107）1g、タルク0.1g及びクロトリマゾール1gを耐圧容器に入れ、バルブを付けた後、LPG/ジメチルエーテル（60/40：w t %）52gを圧入し、被膜形成抗菌エアゾール製剤を得た。

実施例 3

ル酸グリコール0.6g、タルク0.2gを耐圧容器に入れ、バルブを付けた後、LPG/ジメチルエーテル（60/40：w t %）50gを圧入し、被膜形成消炎鎮痛エアゾール製剤を得た。

実施例 4

スチレン-イソブレン-スチレンテブレック共重合体（シェル化学製：カリフレックスTR-1111）0.5g及びアラントインクロルヒドロキシアルミニウム0.2g、タルク0.2%を耐圧容器に入れ、バルブを付けた後、LPG/ジメチルエーテル（70/30：w t %）を圧入し、被膜形成制汗エアゾール製剤を得た。

実施例 5

スチレン-ブタジエン-スチレンテブレック共重合体（旭化成社製：ソルブレン-411）0.5g及びトルナフテート1g、タルク0.2gを耐圧容器に入れ、バルブを付けた後、フロン11/フロン12（60/40：w t %）50gを圧入し、被膜形成抗菌エアゾール製剤を得た。

実施例 6

スチレン-イソブレン-スチレンテブレック共重合体（シェル化学製：カリフレックスTR-1111）0.5g、メントール2g、サリチ

実施例 7

スチレン-イソブレン-スチレンテブレック共重合体（シェル化学製：カリフレックスTR-11107）0.5g、エチルセルロース0.05gを耐圧容器に入れ、バルブを付けた後、LPG/ジメチルエーテル（60/40：w t %）52gを

圧入し、被膜形成エアゾール製剤を得た。

実施例 8

スチレン-イソブレン-スチレンテレブロック共重合体（シェル化学製：カリフレックス-TR 1107）1g、タルク0.1g、エチルセルロース0.07g及びクロトリマゾール1gを耐圧容器に入れ、バルブを付けた後、LPG/ジメチルエーテル（60/40：w t %）52gを圧入し、被膜形成抗菌エアゾール製剤を得た。

実施例 9

スチレン-イソブレン-スチレンテレブロック共重合体（シェル化学製：カリフレックス-TR 1111）0.5g、エチルセルロース1g及びアランティンコロルヒドロキシアルミニウム0.2g、タルク0.2gを耐圧容器に入れ、バルブを付けた後、LPG/ジメチルエーテル（70/30：w t %）52gを圧入し、被膜形成制汗エアゾール製剤を得た。

スチレン-イソブレン-スチレンテレブロック共重合体（シェル化学製：カリフレックス-TR 1111）0.5g、エチルセルロース0.5g、ケトプロフェン2g、タルク0.2gを耐圧容器に入れ、バルブを付けた後、LPG/ジメチルエーテル（60/40：w t %）50gを圧入し、被膜形成消炎鎮痛エアゾール製剤を得た。

実施例 13

スチレン-イソブレン-スチレンテレブロック共重合体（シェル化学製：カリフレックス-TR 1111）0.5g、エチルセルロース1g、ケトプロフェン2g、エタノール5gを耐圧容器に入れ、バルブを付けた後、LPG/ジメチルエーテル（60/40：w t %）50gを圧入し、被膜形成消炎鎮痛エアゾール製剤を得た。

参考例 1

可溶性ナイロン5gをエタノール20gに溶解し、これを耐圧容器に入れ、バルブを付けた後、

実施例 10

スチレン-ブタジエン-スチレンテレブロック共重合体（旭化成社製：ソルブレン-411）0.5g、メチルセルロース0.5g及びトルナフート1g、タルク0.2gを耐圧容器に入れ、バルブを付けた後、フロン11/フロン12（60/40：w %）50gを圧入し、被膜形成抗菌エアゾール製剤を得た。

実施例 11

スチレン-イソブレン-スチレンテレブロック共重合体（シェル化学製：カリフレックス-TR 1111）0.5g、エチルセルロース0.5g、ε-メントール2g、サリチル酸グリコール0.6g、タルク0.2gを耐圧容器に入れ、バルブを付けた後、LPG/ジメチルエーテル（60/40：w t %）50gを圧入し、被膜形成消炎鎮痛エアゾール製剤を得た。

実施例 12

フロン11/フロン12（60/40：w t %）を圧入し、被膜形成エアゾール製剤を得た。

試験例 1

実施例1、7及び参考例1のエアゾール製剤を皮膚に噴射し、被膜形成の状態を観察した。結果を表1に示す。

表1 被膜形成エアゾール製剤の噴射試験

	乾燥時間	被膜の べとつき	被膜の 状態
実施例1の製剤	1秒	なし	良好
実施例7の製剤	1秒	なし	良好
参考例1の製剤	4分	多い	良好

表1からわかるように、本発明の実施例1、7のエアゾール製剤は参考例1のエアゾール製剤に比べ、即乾性で使用感に優れていた。

(5) 発明の効果

本発明で得られる被膜形成剤として熱可塑性エ

ラストマー或は熱可塑性エラストマー及びセルロース系成分を配合したエアゾール製剤は、噴霧した時、即乾性の被膜を形成するため、べとつかず、さらっとしており非常に使用感が良い。また、この時得られる被膜は、強固ではがれにくい膜であるため有効成分が揮散したり、はがれ落ちたりすることがなく、薬効的にも有用である。

以上のことから、本発明の製剤は消炎鎮痛剤、抗菌剤、昆虫忌避剤等の医薬品、ヘアスプレー、制汗剤、等の化粧品、医薬部外品及びその他の製剤として産業上、大変有用である。

特許出願人 久光製薬株式会社
代表者 中富博隆



